ACPL ITEM
DISCARDED

629.4501 1430327
Soule
UFOs and IFOs

j629.4501 1430327
Soule
UFOs and IFOs

STORAGE

ALLEN COUNTY PUBLIC LIBRARY
FORT WAYNE, INDIANA 46802

You may return this book to any agency, branch,
or bookmobile of the Allen County Public Library

DEMCO

STORAG

DO NOT REMOVE
CARDS FROM POCKET

STO
ACPL ITEM
DISCARDED

UFOs and IFOs: A Factual Report on Flying Saucers

There are UFOs, but are they flying saucers? Most UNIDENTIFIED FLYING OBJECTS eventually become IDENTIFIED FLYING OBJECTS, but a few hundred still remain UFOs. Many informed and responsible men believe we are having visitors from other planets: *If Earthmen can hurl vehicles into space, why assume there is no planet with creatures more advanced technically than we are?* Other informed and logical men point out that with a constant watch by space-tracking stations and other observatories, there has been no authentic sighting of an alien spaceship.

The question may never be fully resolved until all UFOs become IFOs. Here is a factual report on UFOs and IFOs, with conflicting comments and opinions. Here, too, are instructions on how you can be more scientific in recording details *if* you ever sight a UFO.

Frontispiece

Ron Lagoe, seventeen, earned a scholarship to college when he built this model spacecraft and flew it successfully. The Oswego, New York, teenager succeeded in soft-landing the model. This was an IFO, not a UFO.

UFOs and IFOs

A Factual Report On FLYING SAUCERS

By Gardner Soule

j629.4501

G. P. Putnam's Sons New York

24 A Laboratory Explanation **165**
25 Watchers of the Skies See Few UFOs **169**
26 "I'm Still Puzzled"—Hynek **182**
Bibliography **190**
Index **191**

1 Unknown Lights in the Night Sky

THE BLUISH LIGHT hung overhead in the dark sky. It was about 9 P.M. when the blue glow appeared over the Crow Creek Indian reservation. The light was near Fort Thompson (population 500), on the Missouri River, in Buffalo County, South Dakota. The night was that of October 11, 1966. The man who reported the light was a rancher, Roger Huston.

No one knew what the light was. Besides Huston, three other men, driving into the area, saw it too. They were Sheriff Lee Roberts, Patrolman Patrick Gribbin, and Game Warden Floyd Gaarder. They observed the light from a point 26 miles west of Fort Thompson.

The light seemed to go through a cycle of changing colors. It was, at different times, bluish, red, or white.

The light, at first overhead, moved toward the east.

After two hours—a long time for an Unidentified Flying Object to hang around in the sky—police at Fort Thompson were watching it. Now their eyes popped. The first light was joined by another. The second light also was seen to change color. From red to green to yellow. Both were described as resembling "lighted merry-go-rounds."

What were they?

The first logical answers that occur are airplanes, helicopters, blimps, balloons. But there were no aircraft in the area at the time the two "lighted merry-go-rounds" were being watched.

Another possible answer: Stars. But Patrolman Gribbin said the first lighted what-is-it was about three times as bright as the brightest stars in the sky. Besides, the people of the ranches and prairie and Black Hills and Bad Lands country of South Dakota know the stars. They live under the stars. The skies are ever-open in the West. Montana, bordering South Dakota, is known as the Big Sky country. When people out west say they see something different, like two sets of mysterious lights in the South Dakota sky, you feel they are not seeing something they can see any night.

Rancher Huston, Officers Roberts and Gribbin, and Game Warden Gaarder had an experience that has been shared by thousands of Americans and persons in other lands.

Unknown and unidentified lights in the night sky have appeared many places. They have been appear-

ing, in some numbers, since World War II, or for over twenty years. The first Unidentified Flying Objects, or UFOs (you pronounce it Yoo-Foes), of the modern era were, in fact, mysterious lights seen by our airmen during World War II over both Europe and the Pacific. Pilots called them "foo balls" or "foo fighters." They turned up again in Korea, and were tracked by radar in Korea, Japan, and Okinawa.

Sometimes, mysterious and unidentified objects show up in the sky in the daytime. They can look circular or egg-shaped or football-shaped or cone-shaped. Or they can look like flying saucers.

Some persons have described more details than were seen over South Dakota. But what Roberts, Gribbin, Gaarder, and Huston did report has been observed time and time again around the globe:

• Mysterious—and so far unidentified—lights in the sky have been seen over many nations, the Atlantic and Pacific oceans, and over crowded cities as well as over the wide-open spaces.

• The colors of the lights seen in South Dakota—red, white, bluish, yellow—have been seen countless times elsewhere.

• That the lights change color, as they did over South Dakota, has been reported many times.

• That the lights seem to go round and round, as in a merry-go-round, has been observed frequently.

The South Dakota sighting was perfectly typical of many observations.

There was a tremendous number of observations of UFOs in the 1950s. Then there were several years of comparative calm and fewer sightings. Now, in the late 1960s, the observations of UFOs are soaring in numbers: UFOs are seen increasingly often, and they are seen by many people.

Many of the very latest sightings are told in the chapters that follow.

In putting together this book, I read every recent account of Unidentified Flying Object sightings—well into 1967—that I could find in newspapers, news magazines, books, and private reports. I received valuable help from the Air Force, the National Investigations Committee on Aerial Phenomena, the Gallup poll, which made a nationwide survey on UFOs, and from many other sources concerned with the mysterious objects in the sky. I have quoted in detail from eyewitnesses, and have reprinted many reports exactly as they appeared. The object is to let you read over my shoulder, so to speak, and to provide you with a look at the current local news, comment, and chatter in the United States and in other lands about UFOs today.

UFOs both puzzle and trouble the people who see them. There is no end in sight yet for the puzzlement and troubling of so many people. Whatever the UFOs eventually turn out to be, one thing is certain: They are a major mystery of our times.

2 Science Takes Up Trail of UFOs

THERE ARE two schools of thought in the United States and the world about Unidentified Flying Objects:

(1) They are spaceships from other worlds.

(2) Nonsense. They can be explained because they are such things as mirages, meteors, planets, jet planes, weather ballons. Many are quickly identified to become IFOs: Identified Flying Objects.

There was, for an example of an explainable case, what was called "The Rotating Lights of Japan." Over Honshu, the main island of Japan, on the night of December 29, 1952, the pilot of an F-84-G (a U. S. fighter plane) saw an unidentifiable light. He was above the clouds and could see at least 40 miles. He saw that the object seemed to show a cluster of lights, red, white, and green, that rotated in a counterclock-

wise direction. Said the pilot's careful report: "As these colors rotated in the body of the object, at times the entire body was one solid color, either white, green, or red, but in the process of completing a revolution the body was frequently fractionally red, white, or white-green, plus the other possible combinations of the three colors." In time, the lights vanished in the west; but not until the crews of two F-94 interceptors also had seen them, one crew for about 40 minutes; and so had the crew of a B-26 bomber, for about 7 minutes. And not before an unidentified radar track, which disappeared 12 miles east of Misawa Air Base, had been made.

The sightings remind you very much of the 1966 sighting over South Dakota related in the previous chapter.

"The Rotating Lights of Japan" were identified as a perfectly well-known object, Venus, the bright star of the evening and morning skies, the most brilliant planet, and the planet nearest the Earth. In this case, Venus was seen under unusual conditions—in a mirage.

Two scientific researchers, Dr. Donald Howard Menzel and Mrs. Lyle G. Boyd, are responsible for this identification, and present it in their book, *The World of Flying Saucers*. Dr. Menzel, born in Colorado in 1901, is an astronomer and astrophysicist. He is a graduate of Princeton and till 1966 was director of the Harvard College Observatory at Harvard Uni-

versity. Mrs. Boyd, a graduate of the University of Kansas, has been a co-author of scientific papers and formerly was publications editor at the Smithsonian Astrophysical Observatory.

To identify the rotating lights, Dr. Menzel and Mrs. Boyd obtained the weather conditions on the night the lights were seen, the bearing of the planes, and the position of the lights. They learned that the atmospheric conditions were such that mirages would be likely to be formed. Venus that night was extremely brilliant; it was 3 degrees above the western horizon, and in position to form a mirage exactly where the unknown lights appeared.

A rotating circle of colors is explained by Dr. Menzel and Mrs. Boyd as due to unusual conditions in the atmosphere. The atmosphere in such a case breaks up the colors in a luminous image and makes them appear to be moving.

When Venus sank beneath the horizon that night of December 29, 1952, "The Rotating Lights of Japan" no longer were in sight to any of the three plane crews that had seen them. The Air Force, which checks up on UFOs, at first called the case of the rotating lights "unknown"; it now calls the case "solved."

By no means, however, have all UFOs been identified.

The problem is not simple. Those who say there are no such things as UFOs from outer space are up

against a difficulty. You cannot prove a negative. There is no way to prove that a thing doesn't exist.

Those who believe UFOs are from outer space need proof. It would help them if such a spaceship landed (as we have landed Surveyor spaceships on the moon)—and if such a spaceship and its crew (if any) stayed long enough for scientists to go out and see it for themselves.

The problem will not be solved by arguments between the two schools of thought on UFOs. A scientific investigation is necessary. In fact, it has begun.

On October 7, 1966, in *News Release 847-66*—or, as it happened, just four days before the mysterious "lighted merry-go-rounds" over South Dakota appeared—the Department of Defense announced that the Air Force had selected the University of Colorado at Boulder to make a detailed, independent study, by scientists, of UFO sightings.

One immediate objective is not to identify UFOs. Instead, the university was asked to study how to go about identifying them. That is, the job is at first to find out how to find out. One step at a time.

Colorado, strong in sciences including aeronautical engineering, atmospheric physics, and astronomy, will get help from other universities. Dr. Edward U. Condon heads the scientific work. He is a professor of physics at Colorado, a fellow of the Joint Laboratory for Astrophysics, and a former director of the National Bureau of Standards. Principal investigators are Dr.

Franklin E. Roach, an astrophysicist with the Environmental Science Services Administration (this is a big name for a new government agency that includes the Weather Bureau and the Coast & Geodetic Survey), and Stuart W. Cook, chairman of the University of Colorado's psychology department. Robert J. Low, former assistant dean of Colorado's graduate school, coordinates the project.

The University of Colorado, said Air Force Secretary Harold Brown, also has help from the nearby National Center for Atmospheric Research. Also in Boulder are the research headquarters of ESSA (the Environmental Science Services Administration). Between them, the National Center for Atmospheric Research and ESSA should know about all that is known about the atmosphere and near-space.

The Colorado research, when it is done, will itself get a going-over. The National Academy of Sciences will appoint a panel that will review the work of the investigators.

Some time ago, Representative John W. McCormack, the Speaker of the House of Representatives, told of the results—or lack of them—of a hearing in Congress on UFOs:

"We could not get much information . . . although it was pretty well established by some in our minds that there were some objects flying around in space that were unexplainable."

The University of Colorado is taking the first step

toward the kind of explanation Speaker McCormack —and the puzzled and troubled people who have seen UFOs—would like to have. The university plus scientists from other institutions are setting out on the trail of the UFOs.

The blotch above appeared in the sky over Tallahassee, Florida, twice in November, 1965. Some Floridians said it was a vapor cloud, hence an IFO. Others still maintain it was an UFO.

Wide World Photo

3 "We Sure Know We Saw Something"

WHEN GERRI STEVENS, the ten-year-old daughter of Mr. and Mrs. Edwin Stevens of Mountain Lakes, New Jersey, was getting into the family car she saw a deep bowl-shaped object high in the sky. It was glowing red and orange. Her mother did not have time to look.

The next day, October 12, 1966, Mrs. Stevens wondered what Gerri had seen. That was when the radio began to tell of UFO sightings the night before. An Unidentified Flying Object carrying lights had appeared, the radio newscaster said, near Mountain Lakes, at Wanaque, New Jersey.

Although Wanaque is wooded and hilly, it is in the heart of a crowded, thickly populated area. Right next to the New York State line, it is only 25 3/10 miles from Times Square, New York City's crossroads of the world. Mrs. Hoke (Grace) Brissenden, who lives

nearby, kept me informed about the developments in Wanaque. They went like this:

About 10 P.M., on the night of October 11, police in Pompton Lakes, New Jersey, radioed the Wanaque police that a bright object was headed toward the 6.6-mile-long, 99,400-acre Wanaque reservoir. This is the largest water storage facility in New Jersey.

In Wanaque, Police Sergeant Benjamin Thompson, who had been on the force six years, was ordered to drive, in his white police jeep, to West Brook Road. The road overlooks the reservoir.

Thompson parked his jeep there. Said he later:

"I got out and walked to the edge of the road. A brilliant white light was over the reservoir. It darted from one hill to the other—like that. Fast. In a split-second, it traveled a half-mile.

"As it passed above the trees, all the branches seemed to be sucked up toward it. I only saw the thing for two or three minutes, but when I turned around to get back in the car, I was one hundred percent blind."

Sergeant Thompson made out a shape behind the dazzling light: It was circular, with a protrusion resembling half a football sticking through it.

Sergeant Thompson radioed headquarters that the object was about as big as an automobile and was hovering 150 feet above the Wanaque reservoir. "It's lighting up practically the whole southern end of the reservoir," he said. After he turned on the red light

on the patrol car, the lighted object disappeared. Many witnesses of UFOs the world around have reported seeing the lights go out.

Two patrolmen, William Pastor and Edward Wester, also saw the UFO at Wanaque. What they reported was a "bright object" that traveled from the direction of Pompton Lakes over the reservoir. "It definitely wasn't a plane," Pastor said.

It would stop, hover a few seconds, then shoot off at great speed. "Sometimes," Pastor said, "it would disappear for a second or two and then you could see it again. We finally lost sight of it shortly before ten P.M. It was heading north over the upper end of the reservoir toward New York State."

One other policeman and a housewife also reported seeing the unknown light in the sky over Wanaque. The same evening a Pompton Lakes, New Jersey, resident reported seeing a glowing object above a 500-foot-high TV tower. Other Unidentified Flying Objects had been seen near the Wanaque reservoir in the summer of 1965, and in January, February, and March 1966. During the February sighting, heat from the UFO was believed to have thawed some of the ice on the reservoir.

On the night of October 12, 1966, three teenage boys in nearby East Paterson, New Jersey, told police they had seen in the sky a "bright cigar-shaped object with a hump on it." A cigar shape is one of the common shapes reported for flying saucers by many eye-

witnesses. Humps, or domes, on the tops of flying saucers have been described frequently. Whatever it was that the boys at East Paterson saw, it was a sight very similar to what many persons, the world around, have reported seeing.

On the night of October 13, over two dozen persons who had parked in Pompton Lakes and Ringwood, New Jersey, to see if they could spot a UFO, did just that. They saw a saucer-shaped object that alternately turned red or green. It was in sight, most said, for about ten minutes. No planes were in the vicinity.

On the night of Monday, October 17, 1966, the Mayor of Wanaque, Harry T. Wolfe, and 400 citizens saw an "oversize star" as it sailed past.

Reservoir Police Chief John Casazza, who has been on the force twenty-five years, is another man who has seen UFOs over the Wanaque reservoir. Says he, "We don't know what they are. But after they came over in February, we replaced all the old floodlights with mercury vapor lamps. They really lit up the reservoir. The UFOs went away. We figured they'd never come back.

"What gets me are these people who call up and tell us we're a bunch of drunks. What do they think we are, idiots? We don't know what we've seen, but we sure know we saw something."

Whatever it is that has kept showing up in New Jersey, just outside the Western Hemisphere's hugest city, New York, it has not been explained.

4 "They Flew Close to the Mountaintops"

NINE GLEAMING disks skipped through the air, the aviator said, with a movement like that of a saucer skipping across water. From that description, the English language got a new everyday term: Flying saucer.

Kenneth Arnold, a Boise, Idaho, pilot and businessman, had seen something he could not explain in the air near the spectacular peak of Mount Rainier, which towers above forests and 28 glaciers and a national park, in the State of Washington. At 2 P.M. on June 24, 1947, Arnold took off in his personal plane to fly from Chehalis to Yakima, Washington. A large U.S. Marine transport plane was believed to have crashed somewhere to the southwest of Mount Rainier. Arnold spent an hour of his trip searching for it. What he saw instead was bright flashes and then nine very bright disk-shaped objects.

Wide World Photo

The Autumn, 1957, issue of *Saucers* reports that this photo was made by Erich Kaiser on August 3, 1954, from the Reichenstein Mountains in Austria. The objects were reported to be silvery white and about the size of a full moon.

Arnold's observation of UFOs, immediately described in U. S. newspapers that last week in June 1947, was the first widely reported sighting. It started discussion of UFOs that has gone on ever since.

He had completed one crossing of the plateau on which Mount Rainier is located when he saw the gleaming disks. He had searched all the ridges for the crashed Marine plane. From the western side of Mount Rainier, he had turned around and was flying toward the mountain, climbing to an altitude of 9,200 feet.

"Mr. Arnold," says an Air Force summary of his sighting, "reported that the air was so smooth that it was a real pleasure flying, and, as most pilots do when the air is smooth and they are at a higher altitude, he trimmed out the aircraft and simply sat in his plane observing the sky and terrain.

"Mr. Arnold reported that there was a DC-4 to his left and rear at approximately 14,000 feet. The sky was reported to be as clear as crystal. He hadn't flown more than two or three minutes on his course when a bright flash reflected on his airplane. He couldn't find where the reflection came from, but to the left and north of Mount Rainier he did observe a chain of nine peculiar-looking objects flying from north to south at approximately 9,500 feet. They were approaching Mount Rainier very rapidly, and he assumed that they were jet aircraft. Every few seconds two or three of the objects would dip or change course slightly, just

enough for the sun to strike them at an angle and reflect brightly. The objects being quite far away, he was unable to make out their shape or formation. As they approached Mount Rainier he observed their outline quite clearly. Mr. Arnold stated that he found it very peculiar that he couldn't find their tails but assumed they were some type of jet aircraft. The objects were observed to pass the southern edge of Mount Rainier, flying directly south to southeast down the hog's back of a mountain range. The elevation of the objects was estimated to have varied approximately one thousand feet one way or another but remained very near the horizon, which would indicate that they were near the same elevation as the witness.

"Mr. Arnold stated that the objects flew like geese, in a rather diagonal chainlike line as if they were linked together. They seemed to hold a definite direction but swerved in and out of the high mountain peaks. The witness estimated the distance between him and the objects to be approximately 25 miles. Using a Zeus fastener, or cowling tool, he estimated the size of the objects to be approximately two thirds that of a DC-4.

"He observed the UFOs passing a high snow-covered ridge in between Mount Rainier and Mount Adams and reported that as the first object was passing the south crest of this ridge the last one was entering the northern crest of the ridge. Later measurement of length of this particular ridge revealed it was approx-

imately five miles, so it was estimated the chain of objects was five miles long.

"Mr. Arnold timed the objects between Mount Rainier and Mount Adams and determined they crossed this 47 miles in 1 minute and 42 seconds. This is equivalent to 1,656.71 miles an hour."

This—in June 1947—was for any type of airplane an unattainable speed. Not till months later, or October 14, 1947, did a U. S. pilot break the sound barrier for the first time. The pilot who did so was Major (then Captain) Charles E. (Chuck) Yeager. His plane was the Bell XS-1, today recalled as the X-1. He was flying out of Muroc Air Base (today Edwards Air Force Base), California: The XS-1—like the X-15 rocket planes of the 1960s—was carried aloft beneath the wing of a heavy bomber and launched in midair. Having once broken the sound barrier, the XS-1 improved on its record the next month, in November 1947, when it flew at 910 miles an hour.

Said Arnold later:

"They flew close to the mountaintops in a diagonal chainlike line. It was as if they were linked together."

He also said, "I watched them about three minutes. They were swerving in and out around the high mountain peaks. They were flat, like a pie pan, and so shiny they reflected the sun like a mirror. I never saw anything so fast."

If no plane could fly fast enough to be Arnold's UFOs, what had Arnold actually seen? Dr. Menzel, the

Harvard astrophysicist, and Mrs. Boyd suggested the possibility of "a mirage, in which the peaks of the mountains seemed to float above the mountain chain." Another possibility was clouds that are sometimes shaped like thick, solid disks in the mountain areas of California, Washington, Colorado, and New Mexico. Or wave clouds—they resemble lenses, or disks, and can move at great speed when the air temperature is changing rapidly. A photograph of wave clouds, made December 29, 1956, by a photographer for the Seattle *Times,* shows two apparently solid disklike objects, flattened, brilliantly white, but dark at the bottom. They are apparently linked together by white streamers. They are skimming toward the peak of Mount Rainier. In spite of the photograph, which shows wave clouds that look very like what Kenneth Arnold described, Dr. Menzel leans to the belief it was a mirage that Arnold saw. The Air Force accepts this answer. The Air Force points out that "smooth and crystal clear air"—the kind Arnold was flying in—increases the chances of a mirage.

Before Arnold's sighting, other U. S. airmen had seen mysterious flying disks and silver balls. These, however, had not been reported in the newspapers, and so did not begin the U. S. public's concern with flying saucers. Arnold's experience did that. Some earlier aviators who sometimes saw things they could not explain were World War II military pilots. They saw what-is-its starting in 1944–5. When they encountered

strange flying objects (often seen as lights at night) in European skies, they at first believed that the Germans had another secret weapon. This was the thought that would naturally occur. The Germans at the time were launching toward Britain their long-secret V-ls (unmanned jet devices) and V-2s (unmanned rockets).

The American pilots over Germany called what they saw "foo fighters." Later, men aboard B-29s (our biggest World War II bombers) en route to Japan also saw the what-is-its. In Europe, the mysterious objects sometimes were seen (like Arnold's disks) in formation. Once an entire bomber crew saw 15 foo fighters following the plane, and glowing on and off meanwhile. Other foo fighters played tag with Allied planes in power dives and danced off the planes' wingtips. One foo fighter chased an American pilot down the Rhine valley.

U. S. intelligence officers were unable to determine what the foo fighters were—either over Germany or over the far western Pacific. One scientist has since called them "exceptional mirages," like that of Venus.

Immediately following the war, during 1946–7–8, something mysterious was observed in the skies over Sweden, Denmark, Norway, Greece, Portugal, Turkey, Spain, and French Morocco. Speeding colored lights —orange, blue, green, yellow or red—seen traveling very fast after dark were usually reported. In some cases, flying disks were reported. Russia had captured

a major German rocket base, plus German rocket experts, at Peenemünde. A logical guess at the time was that Russia, with newly acquired German help, had developed a new rocket or missile, and newspapers labeled the unknown disks "ghost rockets." But none was ever seen to land. In March 1948 they suddenly ceased to be seen. Whatever it was people saw over Europe in 1946–48 never has been explained, any more than were the foo fighters.

In 1947 there actually had been three sightings of what-is-its over the U. S. before Kenneth Arnold's disks over the State of Washington, but the earlier sightings went virtually unnoticed. In April, at Richmond, Virginia, an observer watching a weather balloon saw an unfamiliar object speeding near the balloon. In May, Byron Savage, a pilot from Oklahoma City, saw a huge oval-shaped saucer. Also in May 1947, a very fast saucer was observed at Manitou Springs, Colorado. It changed direction twice.

Still other flying saucers—or at least something unknown in the sky—showed up in 1947 soon after Kenneth Arnold saw them. There was, in fact, such a rash of saucer stories that summer of 1947 that it was suggested that many of the tales were inspired by other tales and that seeing saucers had become a "national pastime." At about 3:15 P.M., on June 28, an Air Force pilot near Lake Meade, Nevada, saw five or six circular objects in formation off his right wing. At White Sands Proving Grounds, New Mexico, several

people in a car saw a pulsating light go from horizon to horizon in 30 seconds. On July 4, 1947, at 11 A.M., four disk-shaped objects were seen streaking past Mount Jefferson, Arizona. When—that same day—pigeons in Portland, Oregon, began to flutter, a policeman looked up and saw five disk-shaped objects; two other Portland policemen, both ex-pilots, saw three disks. Half a dozen other citizens of Portland also saw flying disks that same July 4. That night an airlines pilot followed five saucers for 45 miles after his plane left Boise, Idaho. "We saw them clearly," he said. He saw them silhouetted against the late summer sunset. He described them as thin and smooth on the bottom and rough on top. He did not know what they were, but said "they were not aircraft, clouds, or smoke."

Other summer 1947 observations were made by four Air Force officers at Montgomery, Alabama (a bright light zigzagging fast across the sky); by a Milwaukee housewife (ten saucers sped over her home); by a school-bus driver in Iowa; by a Chicago housewife; by a sergeant in Birmingham, Alabama ("glowing lights speeding across the sky"). On July 8 at 10:10 A.M. at Muroc Air Base, California, a test pilot looked up and saw a yellowish, ball-shaped UFO flying against the wind; several other officers and men saw something similar. Almost two hours later, at 11:50 A.M., at Rogers Dry Lake, adjacent to Muroc Air Base, four technicians sitting in a truck looked up. They saw—near a formation of three planes (two

P-82s and an A-26)—a white, aluminum-colored, unknown object. It fell faster than a parachute then being tested, looked oval-shaped, seemed to have two fins, and flew off against the wind. Four hours afterward, the pilot of an F-51, 40 miles south of Muroc, saw, higher than his plane could climb, a "flat object of a light-reflecting nature."

These sightings in 1947 were the first of the parade of UFO observations that has continued to this day. The great flap over UFOs was on.

5 News Photographer Snaps a UFO

A PHOTOGRAPHER for the biggest newspaper in the United States, New York's "picture newspaper," the *Daily News*—circulation two million a day—saw a UFO and took color photographs of it.

They showed that the UFO did change color: Red, or reddish, to green.

The pictures are among the best evidence yet acquired of the actual existence of puzzling objects in the sky. That is, if it wasn't a star—as the Air Force and policemen who saw it later thought it might be.

The *Daily News* photographer's pictures were made early in the morning of October 21, 1966.

Three policemen in Suffolk County, on Long Island, east of New York City, were the first eyewitnesses of the *Daily News*' UFO. They saw it glowing and hovering and rising in the night sky south of Patchogue.

They saw it darting, saw its lights pulsating and, the *News* reported, changing color—from red to white to green.

Patrolman James Tate, thirty-four years old, was the first to spot the UFO. Said Tate:

"I was checking a rear door of the Dunton Elementary School near the Montauk Highway when I saw this light blinking in the sky just over the treetops.

"It was barely visible, but what caught my eye was it changed color—red-white to green and then back to red. I decided to have a better look, so I used a pair of binoculars that I carry in my car. It was shaped like a sausage and appeared to be hovering in the southeast, somewhere over the Atlantic."

The color changes that Tate saw were very much like those of the Fort Thompson, South Dakota, UFO (Chapter 1) and those of "The Rotating Lights of Japan" (Chapter 2).

Patrolman Tate, a Navy veteran who had observed the stars many nights at sea, reported by radio what he was seeing. Patrolman Fred Kruger and Sergeant Enrico Maimoni quickly joined him. "It was just as Tate said," Maimoni later commented. "It changed color and moved slowly upward. We watched for an hour then notified the air base at Westhampton."

The *Daily News* photographer, James Mooney, had been alerted at 2 A.M. and joined the three policemen. "I wouldn't have bothered with it," photographer Mooney explained later, "but when I saw it

change color and zigzag in the sky, I knew we had something." He said it sped off at times in different directions and gave off a "weird reddish-green light."

Photographer Mooney—"one of our most reliable young men," the *News* called him—and Patrolman Kruger watched the object till, in the morning light around 6 A.M., it finally seemed to vanish.

On October 22, 1966, the *News* printed one of Mooney's pictures—in black and white. "We couldn't reproduce the reds and greens," the paper said. The picture showed a round object in the sky that, even in a newspaper reproduction, appeared to be glowing. Mooney took the picture with a Pentax camera and Tri X 35-mm. film. The camera's F 300-mm. Taikanar lens was set at f 5.6, the *News* said, and exposure was for one-half a second. The image on the original negative was .025 of an inch.

The *News* was quickly deluged with phone calls from Toronto, Canada, and a couple of dozen U. S. cities as editors wanted the photo for their papers, and TV stations wanted to put it on living-room screens. An Air Force spokesman said: "The fact that this object was in sight for so long a time is darned interesting." So indeed it was: Many UFO sightings have been brief—a few seconds, a flash, and the UFO is gone.

Photographer Mooney—plus Policemen Kruger, Maimoni, and Tate—had something, whatever it was. "Some of our best friends are cops and photographers," Henry Machirella wrote in the *News*, "and

when they solemnly agree on seeing an object that is flying and is unidentified, you have to accept their word for it—UFO."

A flying object identified as a comet was discovered on July 25, 1961, by William B. Hubbard, a student at Rice University. Hubbard was tracking a satellite at the McDonald Observatory near Fort Davis, Texas.

6 The Return of a UFO?

1430327

THE NEW YORK *Daily News'* color-changing UFO—or another UFO—appeared over the same area of eastern Long Island six days later, on the night of October 27, 1966. Fifteen persons telephoned Radio Station WALK that they had seen it. "At least 100 persons, including some 27 policemen, reported sighting the UFO last night," the Long Island *Star-Journal* reported, at the top of its front page, on October 28.

What they had seen, many of the witnesses said, was a UFO "like a large star" with red and blue lights that flashed. Others saw blinking green lights. "A big white star," Patrolman Bill Hautman of the Westhampton Beach Town Police described it. Hautman turned his binoculars on it. He saw distinct flashing lights.

Officers in three police cars watched the UFO for about an hour.

Wide World Photo

Michael Savage of San Bernardino, California, shot this picture in 1956, when he was fifteen. He said the object disappeared within thirty seconds.

The UFO on this occasion displayed itself to witnesses in many Long Island communities: Lake Ronkonkoma, Patchogue, Bohemia, Riverhead, Lloyd Harbor, Suffolk County Air Force Base (which reported sightings but would not comment further), Southampton, Westhampton, and Southold.

Some observers described the UFO as bright, multicolored (a white object with red and green lights), cylindrical in shape, hovering from just above the treetops to perhaps 200 feet above the ground. Some said the UFO changed color continuously from red to white to green to white to red. Some witnesses said it made screeching noises.

All told, the Air Force studied 41 sightings of UFOs over Long Island in October 1966; "21 were stars, 7 were satellites, and 7 more aircraft," the Air Force said. "Other 6 still pending final analysis. Those reported by the police officers were identified by the Air Force and agreed to by the police officers to have been stars."

Something over 100 miles away, John J. Autry, of 1226 Boston Road, the Bronx, New York City, meanwhile had his own experiences with a UFO.

Mr. Autry saw *his* UFO at 11:30 on three successive nights, Sunday, Monday, and Tuesday, October 23–24–25, 1966. Each night, Mr. Autry said, "we watched this thing for five or ten minutes. First it was white, then dull red, then it turned transparent blue. It was the size of a quarter held at arm's length. It

went real fast, making turns and going up and down like haywire. When it was overhead, it went straight up, out of sight."

Mr. Autry, who works for a private detective agency, discovered other persons who had seen the same UFO, and—when he had five supporting witnesses lined up—he made his story public.

7 Five Million Eyewitnesses?

"MORE THAN five million Americans assert that they have seen something they believed to be a 'flying saucer.' "

The statement, which is startling, is from a Gallup poll report of May 1966.

What is startling is the tremendous number of Americans who believe they have beheld a UFO. There had only been 11,108 sightings (by February 15, 1967) reported to the Air Force. If five persons saw the UFO in each case, a total of only about 55,000 eyewitnesses would result.

Some persons for years have believed that only a small fraction of the sightings that take place are ever reported. The Gallup poll figure backs up this belief.

What may be happening is that most ordinary citizens do not announce their observations. Many of the

NASA Photo

IFOs most frequently seen and reported are U.S. satellites Echo I and Echo II. Pageos, above, is almost identical to the Echo satellites, which are 100 feet in diameter.

reported sightings, as this book shows, are by policemen and airlines and Air Force pilots. These men are out at night and are trained to notice anything strange. The airmen are themselves in the skies. A housewife who looks out her window at night and sees something may tell her husband and neighbors but probably has no idea what to do next. And her husband may be telling her, "Oh, forget it."

Even more U. S. citizens believe UFO reports.

"And," the Gallup poll continued, "about 10 times as many people—or nearly half of the U. S. adult civilian population—believe that these frequently reported flying objects . . . are real and not just a figment of the imagination."

Exactly half of all the adult women in the U. S. believe that Unidentified Flying Objects are real, the Gallup poll showed; 41 percent of the adult men agree. Only 34 percent of the men and 25 percent of the women thought that the UFOs were imaginary.

A few years ago, only a small fraction of Americans thought that the UFOs were real. There has been a growing belief in them.

The best-educated people have the most faith in UFOs, the Gallup report showed: 51 percent of adults (both men and women) who have graduated from high school or college believe the UFOs are real.

Only 33 percent of those who graduated only from grade school have faith in the UFOs. There are 36 percent of all grade school graduates who do not

believe in them at all. This was the only group of adults mentioned in the Gallup poll that had more disbelievers than believers.

But the education a person has had apparently makes no difference in whether he thinks he has seen a UFO. "Similar proportions of college educated persons," the Gallup poll commented, "and those who have not gone beyond grade school claim to have seen them." The figures: 6 percent of college graduates say they have seen UFOs, 6 percent of grade school graduates, and 4 percent of high school graduates. The flying saucers seem to appear to persons of all levels of education with equal ease.

Today, news of the Unidentified Flying Objects has reached every nook and cranny of the U. S. To the question "Have you ever heard or read about 'flying saucers?' " the Gallup poll-takers got the answer "Yes" from 96 percent of the men and 95 percent of the women they contacted.

The next question was "Have you, yourself, ever seen anything you thought was a 'flying saucer?' " And that was where the surprising number of five million Americans who had seen, or thought they had seen, UFOs turned up. The Gallup result: 4 percent of all American men and 6 percent of all American women say they have seen something in the sky they cannot identify.

By regions of the United States, these percentages divide this way: In the East, 5 percent of the adult

population believes it has seen UFOs; in the Midwest, 6 percent; in the South, 5 percent; in the West, 3 percent.

The Gallup poll, headed by George Gallup, is a long-established method of determining what the people of a nation, or of an area, are thinking. It works like this: A number of carefully selected people in the nation or area are interviewed. They have been selected as typical of those who live there—that is, their ages, education, positions, and so on are a representative cross section of the population.

The Gallup poll interviewed some thousands of persons on the subject of UFOs.

The first thing learned was that almost everyone—those figures of 96 percent of the men and 95 percent of the women—had heard or read something about UFOs.

"In terms of the history of the public's awareness of other incidents or events," said the Gallup poll, "this figure is extraordinarily high. In fact, this awareness score is one of the highest in the 30-year history of the Gallup poll."

When asked if they had seen UFOs, some of the persons interviewed told of their actual experiences:

• Philip Easter, Baltimore, Maryland: "It was dark and I had just come out of a building. I looked up and saw this object hovering in the dark sky above me. It was very bright and stayed in about the same position for several minutes. At first I thought it was a

planet, but I knew it couldn't be because of the way it moved."

• Harold Stoops, as he drove through Topeka, Kansas, in June 1965: "It was very late—about two-thirty in the morning. I saw this round-shaped object in the sky ahead of me. It was extremely bright and I could notice a greenish hue. By the time I stopped the car and got out, it had disappeared."

• A New Jersey housewife: "It was about three in the morning. I was suddenly awakened by a very bright light outside. I got up and looked out the window. The whole area seemed to be lit up like a phosphorous fire. I could hear strange sounds, like the ringing of bells. I know it sounds strange, but the next day several people about twenty miles away reported a similar experience and at almost exactly the same time."

Forty-six percent of the entire U. S. adult population feels the UFOs are real, the Gallup poll-takers learned. Only 29 percent thinks they are imaginary. The rest cannot make up their minds.

Almost twenty years ago, when the first UFOs had just been reported, another Gallup survey showed 40 percent of Americans as disbelievers.

In 1950, the figures had begun to change. More persons thought the flying saucers were real—a trend that continues to this day.

The Gallup poll-takers asked those who believed

in UFOs what they thought they were. These were the answers (in order of frequency):

1. Experimental projects, Air Force tests.
2. Actual vehicles from outer space.
3. Burning gas, "swamp gas."
4. Meteors, shooting stars.
5. Weather balloons.
6. Supernatural revelations.

The most fascinating suggestion about UFOs has been that at least some of them are vehicles from other planets—maybe even carrying intelligent creatures from outer space—that may be learning about the earth the way our Surveyors and Lunar Orbiters studied and photographed the moon and the way our Apollo spaceships (carrying three men each) will orbit the moon, and send men down to its surface.

Six percent of Americans interviewed thought that the UFOs came from outer space.

The Gallup poll also asked if Americans believed there was life, as we know it, on other planets.

One person in every three does believe in life on other worlds, the results showed. Over 40 percent do not believe in it. The strongest believers are the most educated: 37 percent of college graduates think there is life on other planets; 38 percent of high school graduates—but only 25 percent of those who went only to grade school.

This is interesting, but by no means as surprising as that figure of five million Americans who have seen,

or think they have seen, UFOs. If that many actually have beheld the mysterious objects in the sky, the boom in UFOs is far greater than the reported sightings ever have indicated.

8 "I Looked Up and It Was Settin' There"

IN BROAD DAYLIGHT, W. T. Jackson, of Baytown, Texas, near Houston, saw a UFO—and even made out its windows. Kelly Dikeman, who was with Jackson, also saw it. Among all of the sightings so far, their case (reported in September 1966) is one of the most surprising. Here is the story in full, by Jimmie Woods, with the permission of the Houston *Post* :

"Feller, when you set there and count the windows on it, it ain't no reflection."

W. T. (Red) Jackson shot a look of disgust at his questioner, pulled the blue cap a little lower over his weathered face and spat tobacco juice on the driveway.

Still he looked a little sheepish about admitting

Wide World Photo

Ralph Ditter reported photographing this object over his home in Zanesville, Ohio, in November, 1966, with a Polaroid camera.

that he watched a flying saucer skim over his service station at 7499 Bayway Drive in Baytown in broad daylight.

"I was working on my credit cards," Jackson said, "and I looked up and it was settin' there just over them trees, and I wish I'd never looked up the way people been givin' it to me, 'You got any little green men runnin' around up there?'

"Kelly Dikeman—that's D-I-K-E-M-A-N, Dikeman—Kelly seen it, too. He seen it fly off or I wouldn't of told anybody."

Jackson kept it a secret for a week because he knew he would be in for it once the story was out.

Owners of small service stations simply do not look up at the sky at 9 o'clock in the morning and see, hovering before them, a big, saucer-shaped, pure white object maybe 50 feet in diameter and 10 feet from top to bottom; and if they do, not many broadcast it.

Jackson said the object appeared about 9 A.M. July 18, a clear, sunny morning in Baytown. He said it looked like two saucers turned together with a row of square windows between—"That'd be the best explanation I could give you." It bore no markings and nothing was visible through its windows.

"It was white as white could be," Dikeman, the other witness, said. "A kind of glowing white. It was round, smooth outside. It wasn't spinning, just kind of sailing. I never saw anything like it."

Dikeman thought it would measure 30 feet or more in diameter and three feet or so thick, big enough to contain a pilot, "if he was layin' down." Jackson thought it was quite a bit thicker, 10 or 12 feet from top to bottom.

"He got a better look at it than I did," Dikeman said. "It was goin' so fast I couldn't tell too much about it."

"I set here and watched it a good 40 seconds before I said anything to Kelly about it," Jackson said.

When he first saw it, Jackson said, the saucer was about 1,000 yards away and stationary, hovering about 1,500 feet off the ground above the woods across the street east of his station.

"It was just to the left of that gas pump," he said, pointing, "right between them two tall trees when I saw it. Just settin' there. I was so startled I didn't know whether I was havin' hallucinations or what. Nineteen years in the Army, and I was still startled."

Jackson said, "Look, what is that?" Dikeman related. "And I said, 'I don't know.' He said. 'That must be a flying saucer.' And I says, 'Well, I don't know. The only flying saucer I ever saw was at home.' "

As both men broke for the door to get a better look, Jackson said, the saucer darted away to the west.

"I didn't see where it went," Jackson said. "Kelly

got to the door first and he's a big man, 200 pounds, and I couldn't run over him."

"The best I could tell," Dikeman said, "it came out of the woods on the east side and went over that [water]tower and went west. If it kept goin' straight, it looked like it might hit the tower.

"It crossed Bayway right west of the service station, went over Lewis and Coker's store, and it was gone, just like that. It was only visible maybe about four seconds."

Dikeman, 55, who is retired from Humble Oil's Baytown Refinery and occasionally lends Jackson a hand at the station, said the saucer was faster than any airplane he ever saw.

"Oh, yes, sir. They couldn't a jet go that fast," he said.

The two men, skeptical about flying saucers before they saw one, are now equally skeptical of the recently published theories that unidentified flying objects really are only swamp gas or vagrant electrical currents.

"It sure wasn't no fire ball like they said in the Houston *Post* the other day," Jackson snorted.

Dikeman said what he saw was too high for any kind of gas formation he knows of and there are no swamps in the woods where the saucer appeared. Jackson, 48, an ex-Army captain and a former refinery employee, said swamp gas and fire balls do not have windows.

Neither man had ever seen anything—not anything real, at least—to compare to the UFO.

"Well, perhaps, some of those illustrated drawings they've put out," Jackson said.

When the story got out, Jackson said, several men from Houston came to his home at 1201 Bayliss to interview him.

"Some feller, named Owens from Houston—say, you know anybody named Owens?—well, he got me to make a statement and wanted me to sign it," he said. "I signed it."

At times, kidders have deviled him so much, Jackson said, that he has taken the telephone receiver off the hook at home. Even his wife didn't believe him at first, but "she finally does now."

There is one consolation, he said. Two Baytown nurses also saw the saucer that morning "and I wish I'd had 15 of 'em in here for witnesses."

"They were gettin' out of their car at the hospital," Jackson said. "I don't even know what hospital, and they wouldn't tell me their names. They said, 'We're not going to be laughed at.'

"They came in here and told me they saw it, too. They said, 'We just wanted to let you know you're not crazy.'

"I wish I'd got their license number."

9 Some Important UFO Sightings

SOME PARTICULARLY exciting observations of UFOs have done much to build up the story of, and belief in, UFOs in the U. S. Some of the most famous and most exciting incidents were later explained. Some have never been explained—at least not yet.

Examples:

The UFO with two rows of windows

The DC-3 from Houston had reached a point 20 miles southwest of Montgomery, Alabama. DC-3s are the Douglas twin-engined planes that hauled passengers and freight around the world in World War II and are so long-lasting that many of them are flying today. The time was 2:40 A.M. Central Daylight Saving Time, July 24, 1948.

The DC-3's captain was Clarence S. Chiles (8,500 flying hours plus wartime service as a lieutenant colonel in the Air Transport Command).

Captain Chiles' co-pilot was John B. Whitted (a wartime pilot on B-29s, the last and largest four-engine propeller-driven bombers of the Pacific war).

Captain Chiles saw it first. A light dead ahead. It rushed toward his plane.

The light, he thought, became a fast-rushing projectilelike craft. It had a cabin like the pilot's compartment on the DC-3. It had an eerie brilliance that seemed to glow through two rows of windows.

Said Chiles: "An intense dark-blue glare came from the side of the ship. It ran the entire length of the fuselage—like a blue fluorescent light. The exhaust was a red-orange flame with a brighter color predominant around the edge.

"It was heading somewhere," Captain Chiles explained afterward, "exactly opposite to our course. Whatever it was, it flashed down toward us at terrific speed. We veered to the left. It veered sharply, too, and passed us about seven hundred feet to the right. I saw then that it had no wings."

The right side was Whitted's side. Co-pilot Whitted got a good look as the what-is-it went by him. Said he: "The thing was about one hundred feet long, cigar-shaped, and wingless. It was about twice the diameter of a B-29, with no protruding fins."

Chiles and Whitted both said the exhaust flame was 30 to 50 feet long. Chiles thought the object was 700

feet away; Whitted estimated a mile and a half. In all, the unknown object was in view of the pilots for about 10 seconds.

All the passengers were asleep but one—Clarence P. McKelvic.

McKelvic said he saw a strange, brilliant, eerie streak go past his window. "It was very intense," he said, "not like lightning or anything I had ever seen."

The DC-3 flew into Atlanta and on to Boston, the end of its trip.

The Air Force, greatly concerned by this sighting by two thoroughly experienced pilots, called the unknown just that—unknown. But the week of July 23–30, 1948, was a week full of meteors. In Iowa, the night of July 23–4, one watcher saw 14 meteors in an hour—twice the average rate.

That same night, an observer, near the Virginia-North Carolina line, saw a "bright shooting star" in the direction of Montgomery, Georgia. And a crew chief at Robins Air Force Base, Macon, Georgia, saw an extremely bright light speed by in the sky.

A meteor would rush by, and could show the colors (including blue and red-orange) that Chiles saw. It would not, of course, have windows, or a cabin like a pilot's compartment. But seen for 10 seconds from a distance of 50 miles, instead of nearby, a meteor could appear to have them. Or so some people have thought. The unknown in this case is now accepted by the Air Force as a meteor.

But even that doesn't settle the Chiles-Whitted case.

Many other eyewitnesses since have said they saw windows—and lights inside. There is reason to wonder.

The case of the two colonels

A former chief of the Air Force office that investigates Unidentified Flying Objects was the late Edward J. Ruppelt. In World War II he had been a bombardier and radar operator on B-29s (heavy bombers). As a captain, he was head of the Air Force Project Blue Book (the UFO office) from early 1951 till September 1953. While on that job, he created the term UFO (Unidentified Flying Object) to replace the old term, flying saucer.

"On July 4, 1952," Captain Ruppelt wrote in 1956 in *The Report on Unidentified Flying Objects*, "two Air Force colonels, flying a B-25, took off from Hamilton Air Force Base, near San Francisco, for Colorado Springs, Colorado. The day was clear, not a cloud in the sky.

"The colonels had crossed the Sierra Nevada between Sacramento and Reno and were flying east at 11,000 feet on 'Green 3,' the aerial highway to Salt Lake City. At 3:40 P.M. they were over the Carson Sink area of Nevada, when one of the colonels noticed three objects ahead of them and a little to their right. The objects looked like three F-86s flying a tight V formation. If they were F-86s they should have been lower, according to civil air regulations, but on a clear day some pilots don't watch their altitude too closely.

"In a matter of seconds the three aircraft were close enough to the B-25 to be clearly seen. They were not F-86s. They were three bright silver, delta wing craft with no tails and no pilots' canopies. The only thing that broke the sharply defined, clean upper surface of the triangular wing was a definite ridge that ran from the nose to the tail.

"In another second the three deltas made a slight left bank and shot by the B-25 at terrific speed. The colonels estimated that the speed was at least three times that of an F-86. They got a good look at the three deltas as the unusual craft passed within 400 to 800 yards of the B-25.

"When they landed at Colorado Springs, the two colonels called the intelligence people at Air Defense Command Headquarters to make a UFO report. The suggestion was offered that they might have seen three F-86s. The colonels promptly replied that if the objects had been F-86s they would have easily been recognized as such. The colonels knew what F-86s looked like.

"Air Defense Command relayed the report to Project Blue Book. An investigation was started at once.

"Flight Service, which clears all military and aircraft flights, was contacted and asked about the location of aircraft near the Carson Sink area at 3:40 P.M. They had no record of the presence of aircraft in that area.

"Since the colonels had mentioned delta wing aircraft, and both the Air Force and the Navy had a few

of this type, we double-checked. The Navy's deltas were all on the east coast, at least all of the silver ones were. A few deltas painted the traditional navy blue were on the west coast, but not near Carson Sink. The Air Force's one delta was temporarily grounded.

"Since balloons once in a while can appear to have an odd shape, all balloon flights were checked for both standard weather balloons and the big 100-foot-diameter research balloons. Nothing was found.

"A quick check on the two colonels revealed that both of them were command pilots and that each had several thousand hours of flying time. They were stationed at the Pentagon. Their highly classified assignments were such that they would be in a position to recognize anything that the United States knows to be flying anywhere in the world.

"Both men had friends who had seen flying saucers at some time, but both had openly voiced their skepticism. Now, from what the colonels said when they were interviewed after landing at Colorado Springs, they had changed their opinions."

Captain Ruppelt also told another story:

The case of the two sergeants

"On January 20, 1952, at 7:20 in the evening, two master sergeants, both intelligence specialists, were walking down a street on the Fairchild Air Force Base, close to Spokane, Washington.

"Suddenly both men noticed a large, bluish-white spherical-shaped object approaching from the east. They stopped and watched the object carefully, because several of these UFOs had been reported by pilots from the base over the past few months. The sergeants had written up the reports on these earlier sightings.

"The object was traveling at a moderately fast speed on a horizontal path. As it passed to the north of their position and disappeared in the west, the sergeants noted that it had a long blue tail. At no time did they hear any sound. They noted certain landmarks that the object had crossed and estimated the time taken in passing these landmarks. The next day they went out and measured the angles between these landmarks in order to include them in their report.

"When we got the report at ATIC (Aerospace Technical Intelligence Center), our first reaction was that the master sergeants had seen a large meteor. From the evidence I had written off as meteors all previous similar UFO reports from this air base.

"The sergeants' report, however, contained one bit of information that completely changed the previous picture. At the time of the sighting there had been a solid 6,000-foot-thick overcast at 4,700 feet. And meteors don't go that low.

"A few quick calculations gave a rather fantastic answer. If the object was just at the base of the clouds

it would have been 10,000 feet from the two observers and traveling 1,400 miles per hour.

"But regardless of the speed, the story was still fantastic. The object was no jet airplane because there was no sound. It was not a searchlight because there were none on the air base. It was not an automobile spotlight because a spotlight will not produce the type of light the sergeants described. As a double check, however, both men were questioned on this point. They stated firmly that they had seen hundreds of searchlights and spotlights playing on clouds, and that this was not what they saw.

"Beyond these limited possibilities the sergeants' UFO discourages fruitful speculation. The object remains unidentified.

"The UFO reports made by the two colonels and the two master sergeants are typical of hundreds of other good UFO reports which carry the verdict 'Conclusion unknown.' "

The case of the green fireballs

In September 1954, thousands of persons saw a blinding green fireball, described as being as big as a full moon, as it streaked southeast across Colorado and northern New Mexico. Some of the thousands were together at a night football game in Santa Fe, New Mexico. An airliner crew flying to Albuquerque, New Mexico, from Amarillo, Texas, saw it.

Earlier, in 1948, mysterious green fireballs had puz-

zled citizens of New Mexico—and startled air crews. On December 5, 1948, a captain of an Air Force C-47 transport, his co-pilot, and his engineer saw a green ball of fire ahead of them. That same night the captain of Pioneer Airlines Flight 63, a DC-3, saw a fireball east of Las Vegas, New Mexico (near Santa Fe). The fireballs were too big to be ordinary meteors —and also moved in too flat a trajectory.

Dr. Lincoln La Paz, of the University of New Mexico, an authority on meteors, charted the paths of the green fireballs and searched the places where they might have landed as meteorites. He found nothing.

One of the men who watched the 1954 fireball was Harvard's Dr. Menzel, the astronomer who had identified "The Rotating Lights of Japan" (Chapter 2). According to Dr. Menzel, it was a green fireball, and nothing more, and that was what had been seen in 1948 as well. Green fireballs are simply unusual meteors, Dr. Menzel points out—they travel in a level flight path, for one thing—and their appearances over New Mexico have been common.

The tragic story of Tom Mantell

On January 7, 1948, at Godman Air Force Base, near Fort Knox, Kentucky, a huge flying object, intermittently glowing red, was seen overhead by practically all the base personnel. From a P-51 (a fighter plane) Captain Thomas Mantell reported to Godman: "I've sighted the thing! It looks metallic—and it's tre-

mendous in size!" Mantell chased it—up, up, and up. "I'm going to twenty thousand feet," he radioed.

Mantell lacked oxygen equipment. It is thought that somewhere during the climb, he blacked out. His plane crashed. He was killed. His case became famous as that of an American airman who lost his life chasing a UFO.

The Air Force, pressed for a quick explanation, said he had been observing the planet Venus, which was in the right position in the sky. But Venus is hard to see in the daytime.

Many other sightings of UFOs were reported near and around Godman Air Force Base that same day. Viewers described the unknown as "like a parachute," "round," "cone-shaped," and "a balloon." One man said he had looked at it through a telescope and it *was* a balloon. Was it? Probably. The Navy at the time was launching—secretly—new big (100 feet in diameter or more) Skyhook balloons into the upper atmosphere (they fly higher than 60,000 feet) from where they send back weather information. Knowledge of the balloons had then been given only to persons with a "need to know." The balloons long since have come off the secret list.

It was not till four years after Mantell's chase that it was learned that Skyhook balloons were being launched from the Clinton County airport in southern Ohio on the day Mantell was killed.

A wind plot for January 7, 1948, the Air Force

says, showed that the balloon would have been in the area of Godman at the time of the sighting. That is, prevailing wind patterns could well have swept a Skyhook balloon past Godman at the time Mantell gave chase. The balloon would have been still climbing when Mantell saw it, and so he—as he did—would have climbed toward it. It could easily have looked metallic, as Mantell described it. It could have glowed red from the sun's rays.

The Mantell case of 1948, coming as it did a little over six months after the story of Kenneth Arnold's flying disks over Mount Rainier had opened discussion of UFOs in the U. S., quickly was established as a classic UFO tale—one that built up public belief in flying saucers.

Yet there probably was nothing mysterious about what Mantell was pursuing. It was just that not many people, including Mantell in all probability, had heard of a Skyhook balloon.

On April 24, 1949, at White Sands Proving Grounds, New Mexico, a 100-foot-in-diameter Skyhook balloon had been launched and had reached 10,000 feet in altitude. One of the men tracking it shouted and pointed at something else—a UFO. "It was plainly visible," scientists said later. "It was easy to see that it was elliptical in shape and had a 'whitish-silver color.' " The tracking crew looked at the UFO through a 25-power telescope. It was flat and oval-shaped. They tracked the UFO, and later estimated its size

against a range of mountains (it was 40 feet wide and 100 feet long), its altitude (56 miles) and speed (7 miles per second). Other White Sands people and air pilots nearby saw other UFOs.

In April, May, and June 1950, there were 35 reports of UFOs seen by airline crews. "Pilots in general," said Captain Ruppelt of the Air Force's Project Blue Book, "should be competent observers simply because they spend a large part of their lives looking around the sky. And pilots do look; one of the first things an aviation cadet is taught is to 'Keep your head on a swivel'; in other words, keep looking around the sky . . . airline pilots have flown thousands of hours or they wouldn't be sitting in the left seat of an airliner, and they should be familiar with a host of unusual sights."

The case of the bluish portholes

One of the important sightings of UFOs by pilots occurred March 31, 1950, aboard a Memphis to Little Rock DC-3. At 9:20 P.M. pilot Jack Adams saw a white light. So did co-pilot G. W. Anderson. Asked Adams, "What's that?" Said Anderson, "No, not one of those things."

The UFO crossed ahead of their plane. It showed eight or ten portholes; through each one glowed a bluish-white light. It had a blinking white light atop it. There were no other airliners in the area. "I know Jack Adams well," another pilot said later, "And he's

the most conservative guy I know. If he said he saw something with glowing portholes, he saw something with glowing portholes—and it wasn't a meteor."

The case of the five ships

On June 24, 1960, Captain Paul Jagon of the French ship *Fructidor*, in the North Atlantic, saw above the horizon "what appeared as a bright sphere without distinct outlines." It rose, moved rapidly, disappeared. Captain Jagon got surprising backing: Four other ships in the Atlantic, from four other nations, the next day separately reported the same thing. The Dutch S.S. *Catamares* on June 25 saw "a shining cloud with a very bright center." The Liberian motor vessel *Tres Ore*, in a report logged only six minutes after that of the *Catamares*, reported a "flying body" at high speed. It was surrounded by a circular white cloud. Four minutes after *that*, a Finnish ship, the motor vessel *Korshudam*, logged an "unidentified celestial object . . . clearly visible and surrounded by a sharp halo. At intervals a very bright ray of light was directed from the strange phenomena, straight downward." The UFO might have been observing the ships at the same time they were observing the UFO. Ten minutes after the sighting by the Finnish ship, the American S.S. *Santa Sofia*, under Captain G. Hartley, logged a "fast moving, bright object, similar to a star, surrounded by bright white smoke and glare. It was observed for two minutes."

Seamen are experienced observers of the sky, familiar with planets, stars, weather and atmospheric phemonena. Sailors are *not* familiar with the UFOs that some of them have been seeing in the sky.

10 The Air Force and UFOs

IN 1966, Americans reported to the Air Force 1,060 objects in the sky that they could not identify and did not recognize. The Air Force investigates every case reported to it. It always assumes that any UFO reported is a genuine puzzling observation from a trustworthy individual. But there is more to it than that.

The Air Force is charged with the defense of the nation, and anything that is in the air above the U. S. is of crucial importance to it. Always on guard against a possible hostile attack from the air (such an attack occurred at Pearl Harbor on December 7, 1941), the Air Force must operate on the principle that any unidentified object in the air is a potential danger. It must do its best to identify correctly anything reported.

The Air Force office that investigates UFOs has had

different names at different times. It was once Project Sign, once Project Grudge, and today it is Project Blue Book. It has a more formal name: Aerial Phenomena Group of the Aerospace Technical Intelligence Center (ATIC). Today it is headed by Major Hector Quintanilla. It is located at Wright-Patterson Air Force Base, Dayton, Ohio, but the nearest Air Force Base is notified when a UFO is spotted. The simplest thing for an individual who sees a UFO to do is to notify the local police; they know the procedure for notifying the Air Force, and in case of a UFO most police departments notify the Air Force quickly.

The Air Force has been investigating UFOs since 1947: 122 UFOs were seen that year, the year when Kenneth Arnold saw the flying disks over Mount Rainier in Washington—those unidentified objects that began the UFO talk that goes on today. In 1948 there were 156 UFOs reported to the Air Force. In 1952, the all-time high record was set: 1,501 reported cases. Second biggest year was 1966 with 1,060 UFOs. The number of UFOs observed by Americans is climbing: The 1965 figure of 887 was the fourth-highest annual total. Then in 1966 the number of UFOs in U. S. skies again passed 1,000. This figure—approaching 100 a month—could mean that the number of UFOs over the U. S. is on its way to a new record high. With twenty years of checking on UFO stories behind it, the Air Force has looked into 11,108 cases of UFOs, has identified all but 676, and has obtained a wad of information about the mysterious objects in the sky.

Why can't the Air Force identify all the UFOs it hears about?

"Project Blue Book," says the Air Force, "strives to identify and explain all UFO sightings reported to the Air Force."

It strives, but it has not yet proved humanly possible to succeed in every case. Of the 1,060 sightings reported in 1966, the Air Force in its Project Blue Book report of February 15, 1967 (the latest one issued as I write) lists 30 sightings as unidentified.

But those 30 are not all the 1966 cases that the Air Force is unsure of. Twenty-eight cases of UFOs are listed in the report as "still pending." The Air Force feels that it obtained only insufficient data in 242 other cases. This generally means that the eyewitnesses of a UFO were unable to provide detailed descriptions, times, and locations where it was seen, and were by no means complete in their testimony as to what they saw. This is perfectly understandable in the cases of strange objects seen, perhaps fleetingly, and almost always surprising the observers.

What did the identified objects turn out to be?

Besides the 30 unidentified, the 28 pending, and the 242 insufficient data cases of UFOs in 1965, the other UFOs were believed by the Air Force to have been identified as the following: Astronomical objects (like Venus or other planets), 255; aircraft, 270; balloons, 32; satellites, 109; and "other things in the sky," 94. By no means all of the identifications determined by the Air Force have satisfied the eyewitnesses of

some of the UFOs. Some eyewitnesses, in fact, have taken violent issue with Air Force conclusions.

What are those "other things in the sky?"

The 94 "other" 1966 identifications are broken down by the Air Force in this manner: Hoaxes and unreliable reports, 29; missiles and rockets, 2; reflections, 9; flares and fireworks, 4; search- and groundlights, 10; clouds and contrails, 9; chaff, 1; birds, 9; physical specimens, 4 (these were a metal ball, a plastic bag, and a gourd); photo analysis (such things as developer smear), 10; satellite decay (when an orbiting satellite reenters the earth's atmosphere and disintegrates, often spectacularly), 2; and miscellaneous (such things as tracer bullets, kites, or debris carried by the wind), 5.

How does the Air Force investigate?

When the Air Force receives the report of a sighting, it at once sends out investigators, usually an officer plus an assistant, usually a sergeant. They collect information and forward it to the Project Blue Book office at Wright-Patterson Air Force Base. If the first investigation has not identified or explained the UFO, the Air Force makes a second, more intensive investigation. It may call on civilian scientists for assistance.

Who reports UFOs?

"Reports of unfamiliar objects in the sky," says Project Blue Book, "are submitted to the Air Force from many sources. These sources include military and civilian pilots, weather observers, amateur astronomers,

business and professional men and women, housewives, etc."

Are spacecraft often reported as UFOs?

Yes. "An increase in satellites reported as UFOs has come about because of two factors. The first is the increase of interest on the part of the public; the second is the increasing number of satellites in the skies. Positive knowledge of the location of the satellites at all times enables rapid identification of satellite sightings. Keeping track of man-made objects in orbit about the earth is the responsibility of the North American Air Defense Command Space Detection and Tracking System. This sophisticated electronic system gathers complex space traffic data instantly from tracking stations all over the world.

"Other space surveillance activities include the use of ballistic tracking and large telescopic cameras. ECHO (our big balloon satellites) schedules are prepared by the NASA (National Aeronautics and Space Administration) Goddard Space Flight Center at Greenbelt, Maryland, and schedules of the South/North equator crossings are prepared by the Smithsonian Institution's Astrophysical Laboratory at Cambridge, Massachusetts. From the data produced by these agencies, satellites mistakenly reported as UFOs can be quickly identified. Some of these are visible to the naked eye."

Why are airplanes mistaken for UFOs?

"Aircraft account for another major source of UFO

reports, particularly during adverse weather conditions. When observed at high altitudes and at some distance, aircraft can have appearances ranging from disk to rocket shape due to the reflection of the sun on their bright surfaces. Vapor or condensation trails from jet aircraft will sometimes appear to glow fiery red or orange when reflecting sunlight. Afterburners from jet aircraft are often reported as UFOs since they can be seen from great distances when the aircraft cannot be seen.

"The Project Blue Book office has direct contact with all elements of the Air Force and the Federal Aviation Agency civil air control centers. All aerial refueling operations (some aerial refueling operations have been mistakenly called UFOs) and special training flights can be checked immediately. Air traffic of commercial airlines and flights of military aircraft are checked with the nearest control center, enabling an immediate evaluation of aircraft mistakenly reported as UFOs. However, since many local flights are not carried, these flights are probable causes of some reports."

What about balloons?

"Balloons continue to be reported as UFOs. Several thousand balloons are released each day from military and civilian airports, weather stations, and research activities. There are several types of balloons —weather balloons, rawinsondes, radiosondes, and the large research balloons which have diameters up to

300 feet. At night, balloons carry running lights which cause an unusual appearance when observed. Reflection of the sun on balloons at dawn and sunset sometimes produces strange effects. This usually occurs when the balloon, because of its altitude, is exposed to the sun. Large balloons can move at speeds of over 100 miles per hour when moving in high altitude jet windstreams. These balloons sometimes appear to be flattened on top. At other times, they appear to be saucer-shaped and to have lights mounted inside the bag itself due to the sun's rays reflecting through the material of the balloon. The Balloon Control Center at Holloman Air Force Base, New Mexico, maintains a plot on all Military Upper Air Research Balloons."

Has a UFO ever appeared hostile?

The Air Force, charged as it is with responsibility for defense of the U. S., must determine if any UFO is a threat to the security of the U. S.; none ever has been found to be. It must determine whether UFOs are the product of advanced science and technology; the Air Force has so far found nothing in the way of technological developments beyond our present scientific knowledge. And the Air Force must determine where UFOs come from; it must answer the question whether they arrive over the earth from space, other planets, or wherever. So far, says Project Blue Book, "there has been no evidence indicating that sightings categorized as unidentified are extraterrestrial vehicles."

Those "sightings categorized as unidentified"—the UFOs that the Air Force and no one else ever has positively identified—are, however, the ones that plague us. Until they are positively identified, the mystery of the UFOs will be a mystery, and the excitement over the UFOs will not die down.

11 This UFO Was Identified

"IT REALLY had the south end of town excited one night."

"It" was an unidentified flying object—an object in the sky no one at first recognized. Yet within two days everyone knew what it was—and where it came from. The town was Houston, Texas, the largest city in Texas and sixth or seventh largest in the U. S. (its 1960 population: just short of one million), and the home of the U. S.'s Manned Spacecraft Center and of Rice University.

I heard about this UFO in a letter from Elbert Turner, assistant managing editor of the Houston *Post*, the morning newspaper in Houston.

I had asked Mr. Turner to let me know about reports of Unidentified Flying Objects that I had been told of in the Houston area. He sent me a number of clip-

pings from the *Post*. The UFO that later was identified—but that "had the south end of town excited"—was spotted on Friday night, April 15, 1966. The *Post* published this story about it on Saturday morning, April 16:

Red lights fluctuated eerily. Large numbers of Houston residents—including pilots, service station attendants and Rice engineering students—saw an eerily fluctuating red lighted object in the sky about 10:20 P.M. Friday night.

Police switchboards were swamped with calls, drivers stopped their cars to watch it, and a group of Rice students and guards gathered around to speculate on what it was.

Some witnesses said the object, which seemed to have a cluster of red lights, drifted in the sky.

One Rice engineering student, Roy Underwood, said he thought the light or lights was a flare, "attached to a balloon launched by some students."

He said, "It looked like it rose up from the Rice parking lot. I think it's a student prank."

However, Forrest Drewry of 3621 Gramercy, who said he was a World War II B-17 pilot, said:

"I think I can recognize a flare when I see one, and that didn't look like any flare to me."

Most of the calls came from the Southwest portion of the city—mainly around South Shepherd Drive.

Three employees of AV Corp. at 2518 North Boulevard said they watched the object for some time.

They were Bill Bradley, Ed Wilson and Jim Curd.

David Dannenbaum, 28, of 2716 Wroxton Road, a technical writer for Geo-Space Co., said he was driving south on the Southwest Freeway when he first spotted the northbound cluster of red lights.

He described them as "like a circle of red lights with three or four lights in the middle."

He said he pulled off the freeway at South Shepherd and watched the lights make a 9-degree turn to the west.

"Some people were watching it, too. As we watched it, it seemed to go up and the lights began to blur into one another. It was not a plane. A jet plane flew over while we were watching it and another small private plane also flew over."

Bradley and the other two AV Corp. employees said they saw a 707 jet fly under the light cluster as it seemed to rise, at 10:17 P.M.

E. E. Jackson, 56, operator of Jackson's Texaco at 2203 Southwest Freeway, said he and a group of about 20 people watched it from the driveway of the station.

Joseph Mercer, 31, of 6326 Sheringham, who identified himself as a private pilot, said he and six

others watched it from the corner of West Alabama and South Shepherd.

One caller to the Houston *Post* seemed to doubt his own eyes.

"Say," he said, to the blaring background of honky tonk music, "have you folks been getting . . ."

"Yes," he was cut off, "we've had a lot of calls on the red lights in the sky."

"Thank God," said the caller, and hung up.

Although the south end of Houston got really excited over the red-lighted unidentified flying object, it was a one-night wonder.

Next day, the Houston *Post* had a reporter out trying to track down an answer to the Unidentified Flying Object over Houston.

A logical point of investigation, it appeared, was Rice University (formerly Rice Institute). This is a 2,000-student private university in the south end of Houston. It is strong in teaching the sciences of the space age: engineering, physics, chemistry. Rice has a department of space sciences—the first in any U. S. university—and some of its professors work with the nearby Manned Spacecraft Center. It is known for capable students. In 1966, four Rice students, Harriet L. Mauzy, Gordon McH. Braden, William (Dale) Kennedy, and W. Lawson Tritte, won General Electric's quiz contest, *College Bowl*, for five weeks in a row and

set a new high-scoring record for budding geniuses in under-graduate circles.

What all this meant was that Rice students just might possess the ability to launch their own Unidentified Flying Object.

Some students had done so.

Sunday morning, April 17, 1966, along with their breakfast coffee, the citizens of Houston and surrounding South Texas were informed by the Houston *Post* what the UFO had been:

UFO reclassified as Rice freshman's IFO. Friday night's unidentified flying object over Southwest Houston was reclassified an IFO (Identified Flying Object) Saturday.

It turned out to be a prank engineered by an enterprising Rice freshman, Bob Vanzant, a chemical engineering student.

Vanzant, the son of Dr. and Mrs. Thomas J. Vanzant of 3828 Inwood, masterminded the launching of two hydrogen-filled balloons carrying six railroad flares.

Vanzant was assisted in the hoax by David Beakman, Dickinson; James DePitts, Alta Loma; Dewayne Huckaby, Calumet City, Ill.; Mike McParland, West Palm Beach, Fla.; Beau Jon Sackett, Houston; Harold Magnus, Port Arthur; and John Triechler, Midland, Mich.

Vanzant said the "saucer" was actually two

hydrogen-filled balloons carrying an 8-foot frame of wood and aluminum covered with aluminum foil. Railroad flares were attached to provide the cluster of red lights reported by viewers.

Newspapers, radio, television, and police switchboards were swamped with calls shortly after 10 P.M. Friday from Southwest Houston residents who had spotted the red lights from the flares.

In its Saturday morning story, the Houston *Post* quoted one witness, a Rice engineering student, as saying he thought the object had been launched from a campus parking lot by some students.

Rice University space professors Brian J. O'Brien and C. D. Laughlin expect to have the National Aeronautics and Space Administration launch two unmanned 140-pound Owl satellites, named for the Rice football team. They will orbit about 400 miles high and study airglow and radiation in the Van Allen belts and make TV pictures of the aurora. Freshman Bob Vanzant had got his own Rice spaceship up before the faculty and scientists got theirs up.

Thus, the UFO that got the south end of Houston excited was identified quickly and neatly. But by today, other unexplained UFOs have been seen by more witnesses with less known about them than perhaps any other objects in man's history.

Are the witnesses reliable?

There has been a good deal of argument about this.

Now the case of the Houston-Rice University Identified Flying Object strongly indicates to me that the witnesses are reliable.

Consider the Houston case.

In the past, eyewitnesses of flying saucers have been accused of having hallucinations. They did not have hallucinations in Houston. They saw something in the sky, and what they saw was there.

In the past, eyewitnesses of Unidentified Flying Objects have been accused of panic. In Houston, they did not panic: They kept calm, and reported what they saw.

In the past, eyewitnesses of UFOs have been criticized as inexact and unable to tell what they beheld. In Houston all witnesses said they saw a cluster, or group, of red lights; some thought it was proceeding irregularly across the sky. This was exactly what they saw. It was exactly what was there in the sky to see.

In the past, eyewitnesses have been accused of confusing UFOs with airplanes. In Houston, planes were in sight at the same time the red lights were, and there was no mistaking one for the other.

I have been a reporter a good many years, and have interviewed many hundreds of persons. My conclusion is that although witnesses may vary in recalling details, most people are reasonably accurate in telling you what they have experienced. When they say they saw a bunch of red lights in the sky, that is probably what they did see.

Forrest Drewry, the man who knew he was not looking at aviation flares, was correct. Railroad flares, which he was beholding, are different from the flares he saw in the Air Force.

What makes the mystery of the Unidentified Flying Objects so very puzzling is that in the U. S. and around the world there are hundreds of cases where people have seen lights of different or changing colors, or other mysterious objects, in the sky, that have not yet been identified at all. The witnesses themselves are believed to be reliable, as they were in Houston. As Captain Ruppelt of Project Blue Book put it, reports keep coming in "from credible observers of relatively incredible things."

12 Radar Mirages Over Guam

UFOs kept showing up on radar screens at Andersen Air Force Base, Guam, from October 1965 to August 1966.

The Air Force Base at Guam supports our troops in Southeast Asia. The base is a vital installation for American defense.

It follows that Unidentified Flying Objects in the skies near Guam must be turned into Identified Flying Objects (IFOs) as quickly as possible—and if possible.

The UFOs showing up on U.S. radar in Guam were a total mystery. In the words of the Air Force final report on the subject, they "had no known or identifiable source."

The base at Guam told Air Force Headquarters in Washington of the problem.

The result was a thorough, on-the-spot scientific investigation.

The investigation results at first were classified as secret. The final report was unclassified in time to be included in this book.

What happened was this:

Because of the importance of Guam to national defense, and to our military efforts in Southeast Asia, a highly qualified committee—called a team—of officers and civilian scientists was named to make the investigation. The members were especially skilled in electronics—plus radar, space, and other fields.

They were offered any help they needed—chase planes, special cameras, additional people, or whatever.

On August 2, 1966, the team arrived at Guam. Here the men were met by Lieutenant Colonel Howard B. Schroeder, chief of the Combat Intelligence Division, of the 3rd Air Division (Strategic Air Command).

On August 3, 1966, the Air Force final report says, the team met with representatives of the 3rd Air Division. "The first unidentified echo," the team learned, according to the report, "was noticed in October 1965; the frequency had been increasing, with a large increase in June 1966."

According to what was seen on radar, "the targets approached from the northeast (most were first picked up near Rota Island) to within about 30 miles north of Guam and then headed out to the northwest. Speeds

decreased from about 250 knots to 50 knots or less at the point of closest approach, and then increased to 300 knots or more as the target disappeared.

"Altitude reports obtained indicated that the 'bogey' (the UFOs as seen on radar) started out at 10-20,000 feet, decreased to less than 1,000 feet at closest approach, then increased altitude again as it disappeared."

Automatic electronic equipment, carried by all aircraft, identifies the craft as friend or foe to Guam and other U.S. bases in the mid Pacific.

When asked by ground-based equipment to identify themselves as friend or foe, the UFOs actually replied —but they replied in the wrong code.

The Air Force, on the occasions of some radar reports off Guam, sent up planes to search for the mystery objects. Nothing ever was seen by the eyes of human pilots. But even the search planes got something on their radar.

Usually, when experts reach the scene, the reported UFO stays away. This time it was different.

After the team arrived, the Guam UFOs reappeared. They almost seemed to want to cooperate with the experts.

The radar sightings started again on August 7, 1966.

One of the things the team of investigators did was to put down a list of possibilities as to what the UFOs might be. The list included:

A. Actual aircraft, or drones (unmanned planes).

But the speed and altitude of the radar UFOs did not fit any known planes, or drones—and besides, planes or drones can be seen, and there had been no visual sightings of the Guam UFOs.

B. Satellites. But no known satellites have orbits compatible with the radar images; besides, satellites would not answer—not even wrongly—if asked if they were friend or foe by the method used at Guam. Satellites do not have the automatic answering equipment that planes carry.

C. Enemy electronic countermeasure activities. These would have had to be extremely sophisticated measures, the team concluded, to produce the UFOs on radar.

D. Interference from nearby electromagnetic sources. No sources of local interference could be found, nor were there radar reflectors that could explain the Guam echoes.

With these possibilities ruled out, others had to be looked for—and considered.

The team wondered about multiple-trip echoes—echoes from aircraft beyond the horizon, and beyond normal radar range.

Tracks of several of the UFOs were plotted.

The tracks proved to be identical with the routes of big C-141 planes flying near Guam.

But the C-141s were flying too far away, that is, beyond the horizon, to make ordinary radar images. Radar usually reaches only to the horizon, or to some-

thing between the radar station and the horizon, before returning its image.

The Guam UFOs turned out to be so-called second-trip echoes. What happens is that under certain weather conditions, the radar waves emanating from Guam are bent, rise above the horizon in an arc, and in similar fashion can reflect back from an object far beyond the horizon.

Thus, says the Air Force final report, radar returns can be observed from beyond the range of radar.

And from beyond the horizon, you get radar returns from actual objects—in this case the C-141s.

The big C-141 planes—they are our biggest freighter and military supply planes, built by Lockheed, and far huger than anything flown before—are ideal to return such second-trip radar images.

The team concluded that C-141s—and possibly sometimes C-135s—were the cause of the radar images.

The team received word that a C-141 was to fly past Guam, at an altitude of 35,000 feet.

"We predicted," the Air Force final report says, "that a bogey (UFO) would occur and it did."

The UFO, asked by means of ground-based electronic equipment to identify itself, answered by its automatic electronic equipment—in the wrong code.

The plane was asked by radio to identify itself. It answered—correctly.

The pilot of the C-141 then was asked to switch off his automatic electronic friend-or-foe gear. He did

so. Again the UFO was asked to identify itself. There was no reply. When the C-141's electronic gear was switched off, there was silence. When the C-141 pilot again switched on his automatic equipment, the plane again gave the wrong answer.

Had the C-141 been near enough to the Andersen Air Force Base on Guam, its automatic reply would have been in proper code—not distorted and wrong.

The UFOs near Guam thus were proved to be planes beyond the horizon. The mid-Pacific UFOs had been turned instead into IFOs, Identified Flying Objects.

13 UFOs Come Down to Earth

ON AUGUST 12, 1965, near Lincoln, Nebraska, a saucer-shaped UFO circled down for about three minutes near a Missouri Pacific work train. Said brakeman Don Huff: "It had a steel-gray hull, with lights on the rim which blinked in a clockwise pattern. After hovering for a time, it dipped down as if taking a look at us. I looked for outlines of a doorway or some kind of hatch but couldn't see any." Witnesses who backed up Huff were conductor Aca Butler, engineer George Barton, and brakeman R. D. Roe.

That was one of the UFOs that made 1965 a year in which a surprisingly large number of what-is-its were seen to come down near the ground.

The incident was described by a private organization that investigates UFOs—it has no connection whatever with the Air Force or any other government

agency: National Investigations Committee on Aerial Phenomena, or NICAP, 1536 Connecticut Avenue N.W., Washington, D.C. 20036. NICAP's director, Major Donald Keyhoe, is a former Marine Corps pilot. For the past twenty years, as U. S. and foreign flying-saucer sightings have been reported, he has followed developments closely.

NICAP says that it is receiving more reports of UFOs than is the Air Force: In 1965 it heard of between 1,500 and 2,000 Unidentified Flying Objects against the Air Force's 887 (Chapter 10).

Of all the cases of UFOs it hears about, NICAP says: "We estimate that about 300–400 cases a year are substantial ones with no easy explanation."

There were plenty of cases in 1965 with no easy explanation, NICAP said. The organization told of sightings from all over the world. Many of them were not reported in the United States.

The night of October 29, Finland: Witnesses described seeing ten round UFOs, accompanied by a cigar-shaped device that may have been a mother ship. Many reports from Europe over previous years have told of groups of up to ten small UFOs, as well as of mother ships, or "carriers" of the small fleets.

The night of November 14, Clinton, Indiana: Residents and policemen of Clinton spotted a disk-shaped UFO. Three State Police Officers—Jerry Stateler, Richard Finney, and Joe Burton—went to have a look. They saw the UFO.

September 25, Mexico City: A disk-shaped maneuvering object first hovered over the city, then raced away at high speed, diminishing in size and vanishing "like the lights in a TV picture tube when the set is switched off." A witness: Roy Kervin, aerospace editor of the Montreal (Canada) *Gazette*, then a visitor in Mexico City. Kervin, on September 29, again was one of thousands who beheld a UFO. It both hovered over and sped over the city. Through a telescope, Kervin peered at it. "I saw a flat disk, seemingly illuminated from the inside," he reported in the Montreal *Gazette*.

There were some UFOs that came down close to earth in 1965:

About August 15, three miles from Stranraer, Scotland: Mr. and Mrs. Patrick Nash and their four children, driving from Dundee to Stranraer on a vacation trip, saw a glowing red-orange-red disk around 50 yards ahead. Said Mrs. Nash: "I was shocked. My husband and the children saw it just as it lifted off the ground. It swooped low over the car and landed about 20 yards away on the other side. The children were terrified, and my husband and I could hardly believe our eyes. We barely had time to think before the object vanished as quickly as it had come."

On July 30 at 11:30 P.M. near Chesterville, Ontario, Canada: When Ronnie Servage, driving a car, topped a knoll, his headlight beams picked out a strange, round machine hanging poised over the road ahead.

He said it was about 20 feet across the bottom. He said it rose to a domed top. It had antennalike arms, Servage said, protruding from its sides. NICAP comments that similar arms have been increasingly reported, but what they are is unknown. Servage stepped on the gas to get around the UFO. It shot ahead, and stayed ahead of his car even when his speed reached 100 miles an hour. At an intersection, it climbed and vanished. High speed and steep, fast climbs have for years been reported as characteristic of UFOs.

July 28, Lima, Peru: Prospero Alva saw a UFO land. It had an extended arm, he said, "like rolled-up barbed wire." The arm was on a turret that revolved when the UFO was on the ground; thus the arm moved around. The arm disappeared into the turret. The UFO took off slowly, climbed rapidly.

November 29, near Springhill, Nova Scotia: Gary Jardine, ten, and Kevin Davis, twelve, saw a UFO with a flame-type exhaust. It looked like a blinking red dome, made a humming sound, came down near the ground and, when it did, showed portholes. Something like an arm came out of the biggest part, then was retracted. The UFO emitted something like smoke. The boys called Gary's dad, Art Jardine, and Ed Jones, a neighbor. Then men did not see the UFO. But bushes had been flattened. And the snow had been blown around.

Later that night, a similar sighting was reported by a seaman, Ian Kinsey, only 125 miles away.

At 2:05 A.M. on December 16, NICAP reported, Captain J. L. Balduz and Second Officer P. J. C. Riethoven, of the British S.S. *Carl Schmedeman*, saw a brilliant, moving object when their ship was at sea 200 miles west of Lower California. It had what looked like a powerful, directional searchlight. It appeared about three times as brilliant as Venus. It climbed rapidly. Then it appeared to be obscured by, or surrounded by, "a small light-radiating cloud." A small almond-shaped cloud broke off from the original cloud. The first cloud grew longer and glowed. "The expansion into a larger, glowing mass," says NICAP, "is a puzzling factor." Clouds have been reported about UFOs before, possibly formed when a UFO changed direction or speed or when a UFO "carrier" launched smaller UFOs. But a cloud that increases in size is a riddle.

December 26, near Cappoquin, Ireland: Jacqueline Wingfield and a Danish girl named Mortensen saw, while driving along in a car, a solid, round, metallic-appearing object, with a bright flamelike exhaust at its rear, moving swiftly across the sky. Miss Wingfield snapped a picture. Her boss, Charles H. Gibbs-Smith, an aviation historian, put the negative safely under lock and key. The photo was published in the *Illustrated London News* on February 5, 1966: The picture of a dome-shaped object with a rounded

edge forward and something that looked like an exhaust.

But of all the reported UFOs in 1965, there was one above all others, as the next chapter tells, that caused the most excitement in the United States.

14 "It Was as Big or Bigger Than a House"

"I SEE IT! I see it!" the boy, Norman Muscarello, screamed.

He pointed.

Police Patrolman Eugene Bertrand looked above the trees.

"It was rising slowly from behind two tall pines," writer John G. Fuller reports in *Incident at Exeter*, "a brilliant, roundish object, without a sound. It came toward them like a leaf fluttering from a tree, wobbling and yawing as it moved. The entire area was bathed in brilliant red light. The white sides of Carl Dining's pre-Revolutionary saltbox house turned blood-red. The Russell house, a hundred yards away, turned the same color. Bertrand reached for his .38, then thought better of it and shoved it back in its holster. Muscarello froze in his tracks. Bertrand, afraid of infrared rays or radi-

ation, grabbed the youngster, yanked him toward the cruiser."

Bertrand had parked his cruiser, or prowl car, at the edge of a field. It was around 3 A.M. September 3, 1965, when he and Muscarello had stepped out onto the field to look for an Unidentified Flying Object that had terrified Muscarello an hour before.

Norman Muscarello at the time was about to join the Navy. He had been out that night, hitchhiking down Route 50 to Exeter, New Hampshire, en route to visit his mother.

He had been walking along the highway a few miles out of Exeter. He was passing the field between the Carl Dining house and the Russell house. The night was warm, clear, without a moon but with brilliant stars.

There was no warning. Something came at him. Came at him from out of the sky.

"It was," John Fuller later reported Muscarello as saying, "as big as or bigger than a house. It appeared to be 80 to 90 feet in diameter, with brilliant, pulsating red lights around an apparent rim. It wobbled, yawed, and floated toward him. It made no noise whatever. When it seemed as if it was going to hit him, he dove down on the shallow shoulder of the road. Then the object appeared to back off slowly, and hovered directly over the roof of one of the houses." Muscarello ran to one of the nearby houses, knocked hard, but no one came to the door.

A car came by.

Norman Muscarello ran into the center of the highway and waved his arms. The car stopped.

The middle-age couple in the car drove Muscarello into Exeter, to the police station. This is a suite of rooms in an old-fashioned house. In Exeter, it is normally quiet at night. There is a radio that communicates with the town's two cruisers.

Patrolman Reginald "Scratch" Toland on the night of September 3, 1965, was manning the radio.

Norman Muscarello burst in at 2:24 A.M.

"I know you don't believe me," Muscarello gasped. "I don't blame you. But you got to send somebody back out there with me."

Toland called in Patrolman Eugene Bertrand in Cruiser 21. Bertrand quickly arrived.

Bertrand, who had served in the Air Force during the Korean war, listened to Muscarello's story. He then added a surprising twist.

About an hour before, Bertrand said, he had found a woman parked on Route 101. He stopped to volunteer help if she needed any. She said agitatedly that a huge, silent, airborne object with brilliant, flashing red lights had been trailing her.

Bertrand's story added believability to Muscarello's. The patrolman drove the young man back to the field where Muscarello said he had seen the Unidentified Flying Object.

At first, the two saw nothing. Then the horses at the

Carl Dining farm became restless. Then the dogs in the neighborhood began to howl. Then Muscarello saw the thing—again.

And then Bertrand grabbed him and raced toward the police car.

Into the radio in the car Bertrand yelled: "My God. I see the thing myself!"

Back at police headquarters, Toland, at the scream from the normally cool Bertrand, almost leaped out of his chair.

In another prowl car, Patrolman David Hunt heard the whole thing over his radio. He drove to the scene. He too saw the UFO. It was between two tall trees, he says. "I could see those pulsating lights. I could hear those horses kicking out in the barn there. Those dogs were really howling. Then it started moving, slow-like, across the tops of the trees, just above the trees. It was rocking when it did this. A creepy type of look. Airplanes don't do this. After it moved out of sight, toward Hampton, toward the ocean, we waited awhile. A B-47 came over. You could tell the difference. There was no comparison."

Bertrand and Muscarello recalled the UFO as being about 100 yards from them, as rocking, as being silent, with brilliant pulsating red lights. Bertrand could not determine its shape, so bright were the lights. "Like trying to describe a car with its headlights coming at you," he says.

There was more verification: A man phoned the

Exeter phone operator that night and said he had beheld a flying saucer.

So, altogether, five people near Exeter had seen a UFO that same night.

Writer John Fuller heard about the Exeter UFO in the next few weeks. He decided to get to the absolute bottom of it—to interview everyone in any way concerned with it, and anyone else in the area if it seemed wise. His book *Incident at Exeter* (G. P. Putnam's Sons, 1966) got onto best-seller lists, and is today regarded as the most thorough reporting job on a single flying-saucer incident ever made. Fuller took a tape recorder along wherever he went and recorded the comments of people in the New Hampshire neighborhood. For instance, Patrolman Bertrand says he thought about the UFO for a long time afterward. Bertrand continued:

"It's a startling thing, and you think about it because you wonder what it is. Your mind imagines the impossible. The world is going so fast that it could be something from outer space. It makes you wonder, it really does. Dave [Hunt] and I talk about it often. I get the feeling from him that he doesn't think it belongs to the Air Force. I want to keep my mind open. Look for a reasonable explanation. But then, as I look back in my mind again, I wonder. When I first heard the kid tell about it, I thought it must have been a plane. But the more he talked, I knew it couldn't be one. Then I was sure he was talking about a helicopter.

I did ask him on that four-mile ride out to the place, did you feel any wind? I know from a helicopter, he's bound to feel some wind from it. But he said he didn't. I thought he might have got scared, and was mistaken. When we watched it, Dave and I and the kid tried to listen, to hear a motor. We did everything to check it out. We weren't believing our eyes. Your mind is telling you this can't be true, and yet you're seeing it. So you check out your eyes to make sure you're seeing what you're really seeing. We just couldn't come up with an answer. I kept telling Dave, what is that, Dave? What do you think? He'd say, I don't know. I had never seen an aircraft like that before, and I know they haven't changed that much since I was in the service."

Author Fuller spent the fall of 1965 doggedly looking for more eyewitnesses of UFOs in or near the Exeter, New Hampshire, area. What he found surprised him: Altogether, 60 persons, many of them long residents of rock-ribbed and reliable standing in the community, were eyewitnesses. Fuller recorded their comments on tape. "Anyone listening to the hours of tape interviews," Fuller says, "cannot doubt the sincerity and honesty of the people involved."

Mrs. Harlow Spinney, of Stratham, saw a UFO in the daytime. "It was September 27," she said, "just about ten o'clock in the morning. I was driving from Exeter toward Portsmouth, and when I first saw it, it was in the distance. And it wasn't more than fifty feet

from the road at that time, but I was, oh, maybe a mile from it. I thought at first it was a low-flying plane, so I hurried and got around this tractor that happened to be in the road, and got a little closer to it. It appeared to be going toward Portsmouth, not directly along the highway but in that direction. But when I got within two or three hundred feet of it, darned if that thing didn't turn around and come back so I got a perfect view of it in broad daylight." It was metallic, Mrs. Spinney said, had no wings, moved slowly at first, was silent, then stopped, and hovered. "And then it went furiously off," she said.

Lora Davis saw a UFO at night a couple of weeks after the first sighting, that of Norman Muscarello and the four other witnesses the night of September 3, 1965. "A couple of us," she told Fuller, decided we'd try to get a look at it—if there was such a thing—and we stayed up very late waiting for it, up on top of Country Club hill. I guess it must have been about two o'clock in the morning, and I first thought what I saw was a plane, with a little green light on it. And suddenly it went off, and there wasn't any green light. It had turned into a big, huge red light. Just a big red light, blinking on and off. Then it started moving in closer, I guess maybe it came within about three miles of where I was. It was much too big to be a plane, the distance it was." It moved steadily, Miss Davis said, then stopped, then went off in a different direction. She watched it from five to eight minutes.

Ron Smith, seventeen, a senior at Exeter High School, told Fuller: "I was riding around with my mother and aunt. It was a warm night, I guess around eleven-thirty P.M., and this was just about two or three weeks after the officers here saw this object. All of a sudden, my aunt said, 'Look up at the sky!' I thought she was kidding, but I looked up, and then stopped the car. I saw a red light on top and the bottom was white and glowed. It appeared to be spinning. It passed over the car once and when it passed over and got in front, it stopped all of a sudden in midair." Ron Smith, his mother, and his aunt saw the UFO about a half-mile from the field where Muscarello, Bertrand, and Hunt saw one. Says young Smith, "They can kid me all they want. I know what I saw. They don't. Nobody can tell me I didn't see it. Nobody. That's all there is to it."

Mrs. Alfred (Doris) Deyo and Mrs. Rudy Pearce told Fuller they had seen a UFO just the night before he talked with them. So had the teenagers they were driving home from a dance. "This was a real odd craft last night, I kid you not," Mrs. Pearce told Fuller. The youngsters agreed. Mrs. Deyo thought the UFO had portholes with white light coming through them. Mrs. Pearce said she saw several colors of lights, red, green, orange. She thought the flying saucer itself was metallic. Mrs. Pearce said she, with her fourteen-year-old daughter, actually had seen a UFO even before

the September 3 incident—they had encountered one with bright, flashing red lights on July 29, 1965.

One night, author Fuller took Mrs. Pearce, Mrs. Deyo, and a man named Bob Kimball to point out the spot where the women said they had seen UFOs. The four had a strange experience. From the car they saw a high, glowing dull orange disk—"about one-fifth the size of the full moon," Fuller said—that they could not explain. As much as all of his efforts at collecting information about UFOs, this incident made John Fuller a believer in them.

Well after the September 3 incident that set off the widespread interest in the Exeter UFOs, Patrolman Eugene Bertrand went over it again with Fuller:

"I was sure this was a helicopter that the kid was describing. But when it came up from behind the trees, I knew right away that it wasn't a helicopter or any kind of craft I ever ran into. Then when it started coming at us, I kept wondering why we didn't feel any breeze from the blades, and no sound. No sound at all, that's what got me. No tail, no wings, no sound. All I can tell you is that it was definitely a craft, a big one, with the lights so bright that you couldn't make out the shape at all. And it was low. Not much over the treetops."

The Exeter UFO of September 3 became the most-discussed in the U. S. in 1965. No one yet knows what it was. The Air Force, starting with officers from nearby Pease Air Force Base, investigated. It reached no final

conclusion. The UFO of the incident at Exeter is one of those at present listed by the Air Force as unidentified.

15 "It Came Down and Waited for Us"

"WE WERE CLOSE, closer than I ever want to be again," said Deputy Sheriff Dale F. Spaur. "I had never," he said, "seen anything this bright before in my life."

In the dawn of April 17, 1966, two Deputy Sheriffs of Portage County, Ohio, joined the long list of puzzled eyewitnesses of flying saucers—people who have seen something they do not recognize and cannot explain.

At Atwater, Ohio, about five that morning, Deputies Dale F. Spaur and W. L. Neff, of Ravenna, Ohio, were investigating a traffic accident, a routine task. The routine ended quickly.

Their radio alerted the two men to watch for something—an object—heading their way. They saw it at once. Deputy Spaur, who had been an Air Force gunner during the Korean war (and would not confuse

an Unidentified Flying Object with a plane) radioed the Portage County Sheriff's office that it was "about a thousand feet in the air and was extremely bright."

The UFO, Spaur said, was circular and "about thirty to forty-five feet in diameter."

The UFO moved away. The two men, in separate cars, chased it.

It was a fast race. The UFO, Deputy Spaur said, traveled at speeds of from 80 to 103 miles an hour.

The two deputies pursued the UFO down State Route 224 to State Route 14 through Salem and to East Palestine, on the Pennsylvania line, and on to Conway, Pennsylvania, near Pittsburgh.

At East Palestine, they were joined by Patrolman Wayne Hustin. Hustin said the UFO would suddenly change altitude. He continued:

"It was a funny thing, but when the object got too far ahead of us it appeared to stop and wait."

The three men followed the object till it entered Pennsylvania, 86 miles from where the chase began. As eyewitnesses of the UFO they were not alone. Many others that night, United Press International reported, said they saw a strange object in the sky. At Benton Harbor, Michigan, three rubbish collectors said they saw an object so bright "you couldn't look straight at it."

In all, the Associated Press reported, hundreds of people in both Ohio and Pennsylvania said they saw the UFO and described it as "brilliant and shiny."

At Mantua, an Ohio town near where Spaur and Neff began their cross-country chase, Police Chief Gerald Buchert said he saw the UFO and that it looked like "two table saucers put together."

Deputy Spaur said that the whole chase lasted an hour and a half. As he looked up at the UFO, he said, it looked like the head of a flashlight, but a big one—18 feet wide and 40 feet high. He thought there must have been a pilot. Said he: "Somebody had control over it. It wasn't just floating around. It can maneuver."

The autos driven by Spaur and Neff had to slow down, Spaur said, when they reached a tangle of bridges near Rochester, Pennsylvania. He drove under one. "But when I came out from under the bridge it came down and waited for us, just as though it knew these cars were following it."

A UFO that waited a while and then moved on had been reported thirteen years earlier. This one was seen shortly after dark on August 12, 1953, over South Dakota—the state that reported the mysterious bluish light in the night sky in 1966 (Chapter 1). In 1953, it was a bright light that was seen shortly after dark. Radar quickly picked up the unknown object. On radar, the UFO was "well-defined, solid and bright." It moved. It shone bluish-white (exactly like the 1966 UFO over the same state). A pilot in an F-84 arrived to try to intercept the UFO. He chased and chased. Every time he got to a point three miles from

the UFO, as measured by the radar on the ground, the UFO moved away. It seemed as if the UFO had some kind of automatic warning radar of its own that caused it to move whenever something got too close.

Other UFOs have been seen to move away when something got too close. Over Washington, D.C., in July 1952 a series of UFOs was picked up on radar. They flew over the White House and the Capitol—forbidden areas. One of them was seen to be a fiery-orange sphere. Others were seen as mysterious lights. Interceptor planes tried to intercept the UFOs. Whenever the planes drew near, the targets moved away. Some people explained the Washington sightings as caused by weather; to other people, the UFOs over the capital are still unknowns.

There was at least one case where a UFO (if that is what it was) sat still and waited for a plane to avoid it. This was after midnight on January 22, 1952, at one of our farthest-north radar stations in Alaska. The radar at the station made contact with an unknown object apparently 23,000 feet up and flying at 1,500 miles an hour—over Arctic wastes where no planes were. A U.S. jet interceptor got its own radar response from the unknown. The jet got as close as 200 yards, with the image of the UFO still on its operator's scope, and then had to veer away to avoid a collision. The UFO was not identified. It could have been the weather that caused false radar images both on the radar set on the ground and on the radar in the plane. Sometimes

weather causes objects on the ground to appear on radar as though they are solid objects in the sky.

UFOs have been picked up on radar on occasions when planes were not available to intercept; the UFOs on radar have been seen sitting still, moving slowly, or moving off the radar screens at terrific speeds. Once, in daylight in Montana, a radar set picked up a UFO. The men at the radar station looked up and saw a "dark, cigar-shaped object." Over Mobile bay, Alabama, radar spotted a UFO where it was known there were no planes, ships, buoys or anything else to cause a radar return—a total mystery.

Besides sitting down and waiting for Deputy Spaur and the other men chasing it, the Ohio-Pennsylvania UFO made a faint humming that was heard by Spaur. (Some other UFO-watchers on different occasions have reported a similar sound.) Near Conway, Pennsylvania—and the end of the wild dawn chase—Spaur said the UFO hovered and then "was going for altitude, straight up." (Many eyewitnesses and some radar sets on other occasions have observed UFOs to do exactly the same thing.)

At this point, the UFO disappeared.

Of the story of his chase after the UFO, Deputy Spaur said, at the time: "I know nobody's going to believe it, but it's true."

One group of people that did not believe it was the Air Force, which announced: "The probable cause of the sighting by Sheriff Dale F. Spaur of Ravenna, Ohio,

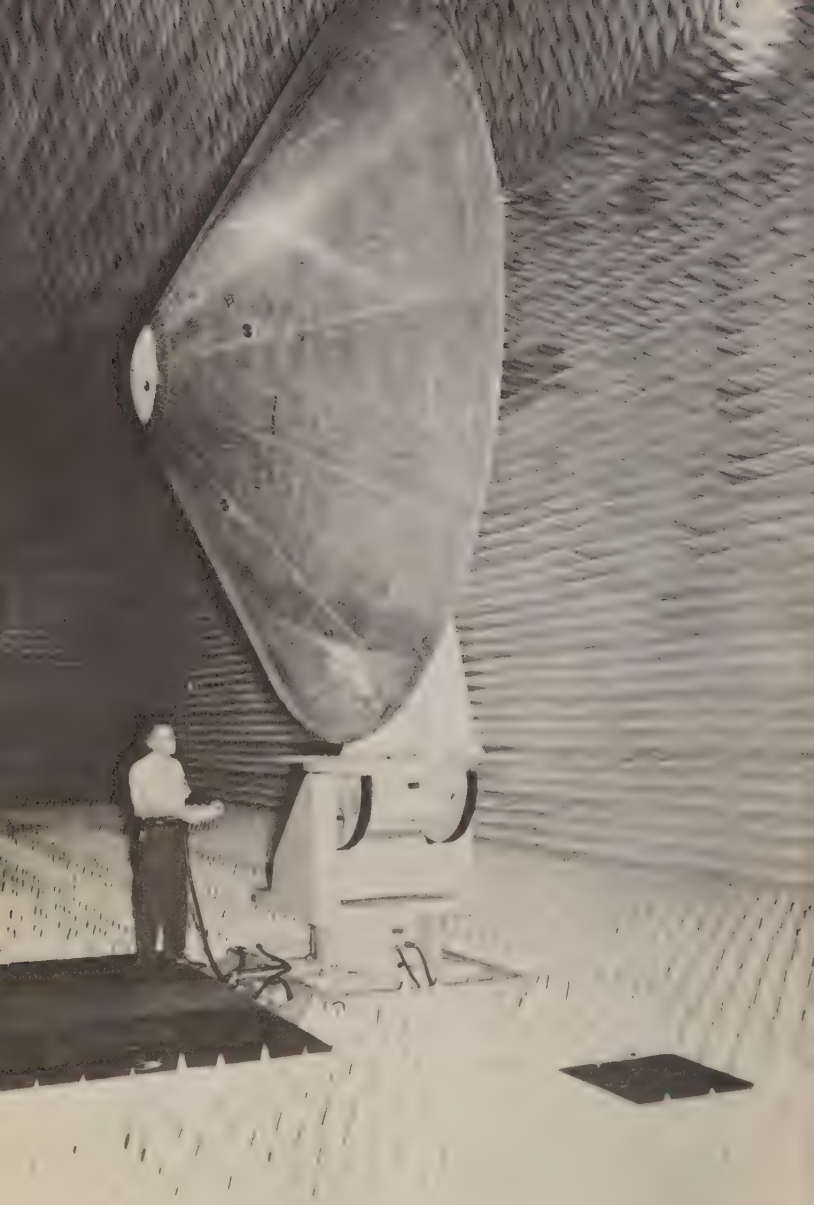
was the decay of a satellite. As it approached the southeast portion of the sky it disappeared, and Sheriff Spaur focused his eyes on the planet Venus. Venus was rising in the southeast, and was brighter than any star in the sky. It is believed that Sheriff Spaur saw the planet Venus." After hearing that, Deputy Spaur stuck to his story without wavering: "I saw it with my own eyes, and nothing short of hell or high water will make me think it was a satellite or Venus."

16 We Send UFOs to Other Worlds

". . . If we can whizz things at the moon and other planets, it is possible that other planets are whizzing things by the earth," commented the Meriden, Connecticut, *Journal*.

Sometimes, UFOs are described as "cone-shaped." There may not be much significance to the fact, but the three-man Apollo spacecraft in which our astronauts will approach and orbit the moon is cone-shaped.

If there were inhabitants on the moon, they might see an Apollo as a cone-shaped UFO. Since the moon lacks atmosphere and water, there probably will not be anyone on the moon to spot the Apollo or the special landing vehicle which will descend to the surface of the moon. This landing vehicle, which will separate from Apollo, is a sort of complicated spidery contrap-



NASA Photo

Disk-shaped capsule is being built by U.S. to land on other planets. Shape is similar to UFOs reported often.

tion with four landing pads, or feet, sticking out of it. You can imagine what an American would think if he saw such a gimmick coming down at him from the sky. A moon man might be every bit as startled.

The most intriguing possibility of the UFOs we see from earth is that they are spacecraft from another world or worlds, and that they may carry intelligent life. The space travel now for the first time possible from the world we live on suggests, of course, that such travel may be possible from other worlds.

It might have been possible from other worlds for thousands of years. All that would be necessary would be for other living beings to have worked out ways of space travel. Their ways would not have to resemble ours.

The fact that we can travel in space suggests that beings on other worlds who can do the same thing would not even need superbrains; they might be no smarter than we are. They would not even need science far ahead of ours; just a few steps ahead might be enough.

Already, the U. S. is sending small spacecraft—unmanned—on long-distance trips through space. Sometimes our little spaceships approach other celestial bodies.

Pioneer VI, a 140-pound spacecraft, 30 inches high and 37 inches in diameter, on December 16, 1965, was launched to orbit the sun. The sun is a blazing star, 10,000 degrees Fahrenheit at its surface, 864,-

000 miles in diameter, and 93 million miles from earth. Pioneer VI discovered that the solar winds—the jet streams of space—do not travel in straight lines. It discovered a high solar wind speed of 1,636,000 miles an hour. The solar wind is an ionized gas, or plasma, that boils off the sun. It flows out in all directions and envelops both the earth and the moon. Later, Pioneer VII orbited the sun (from millions of miles out) and sent back data on solar winds.

Another of our unmanned spaceships, the 575-pound Mariner IV, got close to Mars—as close as 6,118 miles away. This was sensational. Mars at its closest is 35 million miles from earth. Scientists said the accuracy of the Mariner trip was like "rolling a strike in a bowling lane 400 miles long." Mars is a planet and might have life on it. Discussions about the possibility have gone on for decades.

Mariner IV photographed Mars from 10,500 to 7,400 miles out—the first "close" look men have had at Mars. When it got in to that 6,118-mile distance, it took no photos because it was on the dark side of Mars.

"The pictures," says the National Aeronautics and Space Administration, "show a surface pitted with craters. They show a landscape that may not have changed much in billions of years." Adds NASA: "What Mariner IV did not find out was whether Mars has any form of life. Nor was it intended to. The Mariner IV mission, though, blazed the way for later

spacecraft to land instruments and, eventually, men on Mars."

The photos failed to show physical features that could have been the basins of former oceans, rivers, lakes, or seas. This could mean Mars never has had significant moisture nor an atmosphere much thicker than the present one. In that case, the chances of life on Mars are slim.

The photos—altogether Mariner IV took 21, and part of a 22nd—covered only 1 percent of Mars' surface. They failed to show mountain chains, great valleys, or continental masses. Mars appeared to be dry, marked by craters, and subject to dust storms. Astronomers had noted some straight lines on Mars; speculation has been these were canals cut by intelligent beings. Mariner IV's photos showed no straight lines. Some scientists, however, believe some forms of life may be there.

The flight of Mariner IV was the nation's longest and deepest space mission. It sent back to earth millions of scientific measurements on both the environment of space and Mars. "The spacecraft," said the National Geographic Society, "wrote an encyclopedia of facts about the red planet." The radio signals continued when Mariner was 191,059,922 miles from earth. Mariner IV, said President Johnson, was "one of the really great advances of science and technology."

An earlier Mariner, Mariner II, went past Venus. Venus, the evening star, the brightest star we see by

evening or by morning, is the closest planet to the earth (25,700,000 miles at its nearest) and the brightest celestial object we see except for the moon and the sun, and that is why it has been the cause of a number of flying saucer reports—i.e., the eyewitnesses saw the planet Venus, and not a UFO. Venus is almost the same size as earth. It has a diameter of 7,700 miles, only 227 miles less than the earth's. Is there life on Venus? Mariner II reported a surface temperature of 600 to 800 degrees, and an atmospheric pressure 60 times that of the earth. This suggests that the sunlit side of Venus may be a desert baked dry on a scale unimaginable to us—hence, no life as we know it could exist. But there is a dense cloud cover that hides Venus' surface; we have not yet managed to take a photograph through it.

A good many UFOs seen from earth have been described as disks or saucers. The U. S. now is preparing a disk-shaped capsule to carry instruments that will be dropped by parachute onto Mars. At the White Sands Missile Range, New Mexico, the disk has been dropped. It has eight small rocket engines that give it a downward velocity of about 10,000 miles an hour—about the speed it will need to enter the Mars atmosphere. Over White Sands, the projected landing on Mars was tested. The parachute opened, the disk fell away from the chute, and the parachute and the instrument package landed—near the Missile Range, that is. The surface of Mars is a future goal.

A flying object reached the moon on July 31, 1964. That is, we put a spacecraft there, but it was hardly flying—it crashed onto the surface of the moon. This was Ranger VII. As Ranger VII approached the earth's biggest satellite, it sent back 4,316 photographs. Some of them showed the insides of craters that earth-based telescopes never could see.

Altogether, three Rangers sent back 17,259 close-up pictures before crashing onto the moon.

Later, Surveyor I, launched May 30, 1966, landed gently on the surface of the moon, and, with its camera six feet above the lunar soil, proceeded to take shots all around its position in what is called the Sea of Storms. It showed rocks 6 inches high. Surveyor II crashed on the moon. Later Surveyor III used its mechanical claw to scratch the soil of the moon. The moon soil proved to be like coarse, damp beach sand on earth.

Once you get into space, your progress in space flight speeds up—another reason otherworldly creatures conceivably could be ahead of men. For example, when The Boeing Company started to build Lunar Orbiter I, the job took only 28 months and 15 days after the contract was signed—a record fast time for building a new major spacecraft, and an indication that it no longer takes a long time for men on this world to build an object to orbit the moon.

Lunar Orbiter I, the first of five projected, went off on August 10, 1966, to circumnavigate the moon,

which is 239,000 miles from earth on the average, and to photograph it. It orbited the moon hundreds of times. It sent back photos to help in the selection of suitable landing sites for the American astronauts who fly to the moon in Apollo ships.

Lunar Orbiter I found the moon turbulent and changing; volcanoes on it may be active; its crust splits; boulders spill into craters. Not entirely dead, or frozen, as had been thought, the surface of the moon may be as dynamic as that of earth. At least there is some movement. Lunar Orbiter I found that great craters on the moon may be caused by meteorites. It found mountain peaks resembling Mount Rainier along faults where the surface of the moon had cracked. It showed that the moon, like the earth, bulges at the north pole and flattens at the south. It photographed both front and back sides of the moon.

Before it was through, it took a now-famous picture of the crescent earth as it looks from the moon—our first picture of the kind. Lunar Orbiter I is estimated to have sent back more information about the moon than we had collected in the fifty years before it.

Later, Lunar Orbiter II followed. At 28.4 miles above the moon, it photographed the inside of the amazing, stark crater Copernicus, 60 miles wide and 2 miles deep, on the moon's surface. The crater, one of the most prominent features on the moon, contains mountains 1,000 feet high. The photo, released November 30, 1966, showed a mountain on the horizon

3,000 feet in altitude. By mid-January 1967, Lunar Orbiter II had completed more than 450 orbits.

Lunar Orbiters I and II—plus Orbiters III and IV, which sent back later TV photos of the moon—proved the ability of man to send an orbiting object at least to the moon to obtain detailed information. And this after only a few years in space. Russia's first Sputnik, man's first artificial satellite of any kind whatever, was, after all, launched to circle the earth as recently as 1957.

"A scant 10 years ago," William J. Cromie writes in the Rice University *Review*, "there was no space program. The world's first two artificial satellites were Russia's Sputnik I and II late in 1957, the United States' first two were Explorer I and Vanguard I early in 1958. In less than a decade a momentum has built up that will carry us to the moon in a few years and to Mars before the end of the century. It once was believed that the route to other planets was through an empty void. Now we know that interplanetary space is a seething sea of swiftly flowing gases, tremendously energetic atomic particles, fluctuating magnetic fields, and planetary debris. All these things interact with the earth and cause changes that directly or indirectly affect everyone. Whole new frontiers are being opened up to increase our knowledge of these phenomena and to support manned missions in space."

With that record of acquiring knowledge in and about space, there is every reason to hope and believe

that scientists from the University of Colorado and elsewhere—now on the trail of UFOs as Chapter 2 reports—can acquire the knowledge that will at last tell us what the UFOs are.

Surveyor I, an IFO to us, may be a UFO to beings on other planets. Shown after it landed on the moon, Surveyor I appears as a white object casting a 30-foot shadow. Photo was taken by Lunar Orbiter III.

NASA Photo

17 Are Some UFOs Ball Lightning?

EVER SEE or even hear of something called kugelblitz?

Kugelblitz is ball lightning—a rarely seen lightning that looks like balls of fire, that can move along at a moderate speed, and can disappear noisily or silently.

Kugelblitz could have been some of the UFOs people have reported seeing.

We know this because, in 1966, two scientists in a research laboratory presented a theory that ball lightning could exist. They showed that it might exist—although they themselves never have seen it.

That ball lightning does indeed exist was certain as it could be to one housewife who was cooking dinner during a thunderstorm. A glowing ball of lightning came down the chimney, dropped at her feet, and danced about the kitchen floor.

NASA Photo

This green-red-blue object seen over eastern U.S. on September 24, 1966, was promptly identified. It was a vaporized barium cloud launched by NASA to check wind movement and to measure electric fields in upper atmosphere.

She ran into the next room. The kugelblitz was at her heels. The ball lightning crossed the room and slipped out through a door. It floated around the yard, entered a barn, and climbed up a wall. This time it exploded, instead of vanishing quietly. The barn caught fire and burned down.

The woman knew perfectly well that there was such a thing as ball lightning. Now science theorizes that her eyes and her experience did not deceive her. So doing, science may also have shown what some UFOs may have been; no claims are made, however, by the scientists involved that they have identified any UFOs.

Over the years, the strange antics of ball lightning have been reported by people who, like the housewife, saw them firsthand; other persons pooh-poohed the whole idea of ball lightning. Ball lightning often was called a figment of someone's imagination, or an optical illusion. "For years," said the Westinghouse Electric Corporation, "the usual answer was to place ball lightning—along with flying saucers, the Loch Ness monster and the abominable snowman—in the category of folklore."

Then, on May 5, 1966, Westinghouse announced that two of its scientists had presented a theory of ball lightning. The scientists, the company said, had completed a research job that was supported in part by the Geophysics Branch of the Office of Naval Research. Details of the research were published May 5, in the *Journal of Geophysical Research* in a paper

entitled "A Theory of Ball Lightning." Said the paper:

"Although lightning strokes apparently give it birth, ball lightning is not at all like the short, brilliant, jagged flashes so familiar to everyone. Instead, it usually appears as a round, moving blob of light about the size of an orange or small grapefruit. It can be white or almost any color of the rainbow. It drifts through the air or hovers near the ground for periods of a few seconds to several minutes. Then it collapses and disappears, sometimes quietly, sometimes with a loud bang.

"People say they have seen ball lightning dancing along fences, drifting through open doors and windows, perching on telephone wires, floating inside high-flying airplanes, and dropping down stovepipes and chimneys. It is reported to have slipped from a room by way of a keyhole; drifted inside an iron stove and blown it to bits; fallen into a four-gallon cask of water and brought it to a steady boil.

"Little wonder that such unnatural behavior has been tagged an optical illusion or sheer imagination. Undoubtedly many cases are. But not always."

In 1964, Drs. David Finkelstein and Julio Rubinstein of Yeshiva University proposed that ball lightning was the result of a change—during a thunderstorm—in electrical conductivities around a ball of air.

The Westinghouse scientists took off from there.

They theorized that ball lightning results from the change in electrical conductivities in the air as speci-

fied—plus changes in temperature and radiation. One explained:

"We visualized a ball of air that was warmer than the air around it. Then we theorized a current of electricity being naturally drawn to this ball of air rather than the colder air around it.

"This current would be enough to heat the air even more—enough to light it up."

The next step was to write a series of equations to describe ball lightning. The scientists then fed the equations into a computer.

The electronic computer told the men that ball lightning could be the size of a grapefruit, with the brightness of a 1000-watt light bulb. (Just as it had been described by eyewitnesses.)

The Westinghouse scientists estimate the central temperature of ball lightning at from 3500 to 6000 degrees Centigrade. They figure ball lightning of 5000 degrees Centigrade (9032 degrees Fahrenheit) and of an 8-inch diameter would be almost as bright to the eye as a 1000-watt light bulb.

They explain the movement of ball lightning:

"When the cloud-to-ground currents are symmetrical about the ball and flow symmetrically through it, the theory shows the net forces on the ball to be zero, and it stands stationary in space. But any change in these symmetrical forces causes the ball to move. Similarly, any change in the symmetrical shape of the ball causes it to move."

Says the Westinghouse Corporation:

"Ball lightning disappears quietly, the theory predicts, when the electric currents through it gradually fade away. But it collapses or blows up with a bang whenever the current is rapidly shut off or increased.

"How does ball lightning get started in the first place? The Westinghouse scientists theorize that just the right amount of air is heated by a lightning stroke when the electric field between cloud and ground and the density of the electric current through the air are within the mathematical limits their calculations specify.

"This rare set of circumstances explains why you probably have never seen it quietly rolling toward you along the backyard fence or hissing at you as it peeks in through the living room window."

A few UFOs have been reported as hot. Like the ball lightning as described by the Westinghouse scientists, UFOs have been seen to be brilliant. UFOs move; so does ball lightning. UFOs sometimes stand still; so does ball lightning. Both are seen to disappear with a noise or without a sound.

This work on ball lightning is not claimed to explain any UFOs. But it does explain a phenomenon that, like UFOs, has been seen by some persons and ridiculed by others.

One man who thinks that ball lightning and some flying saucers might be one and the same is Philip J. Klass, an electrical engineer who worked for the Gen-

eral Electric Company for twelve years and who today is on the staff of the magazine *Aviation Week & Space Technology.*

And interview with Mr. Klass appeared in *The New York Times* on August 23, 1966. Mr. Klass had looked into what was known about ball lightning, including the results of the Westinghouse scientists.

Mr. Klass, the *Times* reported, believes that the fact that UFOs often look much larger than ball lightning could be explained by "the illusory nature of a dancing, glowing ball of light, by fright, and by a lack of familiar objects with which to compare the 'saucers.'" Mr. Klass makes no claim that he is explaining UFOs.

But ball lightning is associated with an electromagnetic field. UFO eyewitnesses sometimes have reported that a UFO in the vicinity has caused trouble with their automobile ignition system and radios. Ball lightning might explain such trouble.

Along power lines, there sometimes is what is called a corona discharge—balls of ionized air that congregate along high-tension lines. Such a corona discharge —which may be similar to ball lightning— could detach itself and dance, hover, and spin as ball lightning does, and so could give rise to at least some reports of UFOs, Mr. Klass believes.

Some UFOs, including some reported by John G. Fuller as having been seen around Exeter, New Hampshire (Chapter 14), have been observed near power lines. Mr. Klass believes that corona discharges are

more likely when dust, salt deposits, and even insects contaminate a power line. Exeter is 10 miles from the salty Atlantic Ocean, and its electric lines run down to the shore. Officials of the power company there told Mr. Klass that the corona discharge occurs more often where "there is not much rain to clean off the lines."

During 1965, when, as Mr. Fuller reported, Exeter had many sightings of UFOs, Exeter had only half its usual rainfall. Corona discharge and/or ball lightning could have been some of the Exeter UFOs.

Another view of Surveyor I, the IFO on the moon. Grained area is moon's surface 6 feet from camera. White is leg of Surveyor I.

NASA Photo

18 The Cow That Went Into the Sky

ALMOST AT THE END of the last century—in April 1897—there occurred, near Le Roy, Kansas, one of the most startling of all the incidents that have involved Unidentified Flying Objects. It never has been explained. It is not possible to explain it in the light of any knowledge we have today.

The story was told not long ago in a speech by Josef Allen Hynek, a civilian astronomer at Northwestern University who has worked with the Air Force in studying UFOs for twenty years. The tale has also been mentioned by Jacques Vallee in *Anatomy of a Phenomenon* and by Frank Edwards in *Flying Saucers—Serious Business.*

The mysterious incident of April 1897 was first described by an eyewitness, Alexander Hamilton, a farmer well known in Woodson, Allen, Coffey, and

Anderson counties of the State of Kansas. In a sworn statement dated April 21, 1897, Hamilton said, "Last Monday night, about ten-thirty, we were awakened by a noise among the cattle." Then:

"I arose, thinking that perhaps my bulldog was performing some of his pranks, but upon going to the door saw to my utter astonishment an airship slowly descending upon my cow lot, about forty rods [660 feet] from the house.

"Calling my tenant, Gid Heslip, and my son Wall, we seized some axes and ran to the corral. Meanwhile, the ship had been gently descending until it was not more than thirty feet above the ground, and we came within fifty yards of it.

"It consisted of a great cigar-shaped portion, possibly three hundred feet long, with a carriage underneath. The carriage was made of glass or some other transparent substance alternating with a narrow strip of some material. It was brilliantly lighted within and everything was plainly visible—it was occupied by six of the strangest beings I ever saw. They were jabbering together, but we could not understand a word they said.

"Every part of the vessel which was not transparent was of a dark reddish color. We stood mute with wonder and fright, when some noise attracted their attention and they turned a light directly upon us. Immediately on catching sight of us they turned on some unknown power, and a great turbine wheel, about thirty

feet in diameter, which was slowly revolving below the craft began to buzz and the vessel rose lightly as a bird. When about three hundred feet above us it seemed to pause and hover directly over a two-year-old heifer [a young cow that has not had a calf] which was bawling and jumping, apparently fast in the fence. Going to her, we found a cable about a half-inch in thickness made of some red material, fastened in a slip knot around her neck, one end passing up to the vessel, and the heifer tangled in the wire fence. We tried to get it off but could not, so we cut the wire loose and stood in amazement to see the ship, heifer and all, rise slowly, disappearing in the northwest."

The heifer was hauled up into the night sky near Le Roy, Kansas, six years before Wilbur and Orville Wright flew man's first airplane at Kitty Hawk. The only devices men in 1897 had to ascend into the skies with were balloons. Balloons were well enough known so that any in Kansas would have been quickly identified.

Hamilton continued: "We went home, but I was so frightened I could not sleep. Rising early Tuesday, I started out by horse, hoping to find some trace of my cow. This I failed to do, but coming back in the evening found that Link Thomas, about three or four miles west of Le Roy, had found the hide, legs and head in his field that day. He, thinking someone had butchered a stolen beast, had brought the hide to town for

identification, but was greatly mystified in not being able to find any tracks in the soft ground. After identifying the hide by my brand, I went home. But every time I would drop off to sleep I would see the cursed thing, with its big lights and hideous people. I don't know whether they are devils or angels, or what; but we all saw them, and my whole family saw the ship, and I don't want any more to do with them."

People who knew Hamilton well testified to his reliability in an affidavit (a sworn statement):

"As there are now, always have been and always will be skeptics and unbelievers whenever the truth of anything bordering the improbable is presented, and knowing that some ignorant or suspicious people will doubt the truthfulness of the above statement, now, therefore, we, the undersigned, do hereby make the following affidavit:

"That we have known Alexander Hamilton for one to thirty years, and that for the truth and veracity we have never heard his word questioned, and that we do verily believe his statement to be true and correct.

Signed:

E. W. Wharton, State Oil Inspector
M. E. Hunt, Sheriff
W. Lauber, Deputy Sheriff
H. H. Winter, Banker
H. S. Johnson, Pharmacist
J. H. Stitcher, Attorney

Alexander Stewart, Justice of the Peace
F. W. Butler, Druggist
James W. Martin, Registrar of Deeds
and H. C. Rollins, Postmaster
Subscribed and sworn before me this 21st day of April, 1897."

The hide, legs, and head of the heifer, apparently dropped to earth because no tracks were found in the soft ground around them, seem to prove that something—something mysterious, something from the skies above—actually did haul the animal up and away.

Nineteen years before the mystery of the vanishing heifer, another eyewitness had provided a detailed description of a UFO. The man, John Martin, a farmer, lived near Denison, Texas, and the Texas-Oklahoma border. His story appears in *The Flying Saucers Are Real* by Donald Keyhoe, of the National Investigations Committee on Aerial Phenomena (Chapter 13). Major Keyhoe credits the story to the Denison *Daily News* of January 25, 1878:

"From Mr. John Martin, a farmer who lives some six miles south of this city, we learn the following strange story: Tuesday morning while out hunting, his attention was directed to a dark object high up in the southern sky. The peculiar shape and velocity with which the object seemed to approach riveted

his attention and he strained his eyes to discover its character.

"When first noticed, it appeared to be about the size of an orange, which continued to grow in size. After gazing at it for some time Mr. Martin became blind from long looking and left off viewing it for a time in order to rest his eyes. On resuming his view, the object was almost overhead and had increased considerably in size, and appeared to be going through space at wonderful speed.

"When directly over him it was about the size of a large saucer and was evidently at great height."

That is probably the first time in history the word "saucer" was used in reference to an Unidentified Flying Object. But not until Kenneth Arnold in 1947 said he saw flying disks acting like saucers skipping across the water was the phrase "flying saucer" commonly used.

"Mr. Martin thought it resembled, as well as he could judge, a balloon. It went as rapidly as it had come and was soon lost to sight in the heavenly skies. Mr. Martin is a gentleman of undoubted veracity and this strange occurrence, if it was not a balloon, deserves the attention of our scientists."

In the late 1800s, people saw many unusual objects in the air—not only near Le Roy, Kansas, and Denison, Texas, but many other places as well. The nineteenth-century reports, Jacques Vallee, who has

studied them, says in *Anatomy of a Phenomenon*, are well documented. "They represent a large amount of data," he says, "and their reliability is excellent."

The accounts of UFOs by the late 1800s usually included some specific details. Some of the observations toward the end of the century: 1871, above Marseilles, France—a large round body, moving slowly, seen for about fifteen minutes; 1880, March 22, at Kattenau, Germany—several brilliant luminous moving objects; 1888, May 4, in New Zealand—an oval-shaped disk. In 1897, in the U. S. Midwest—a cigar-shaped object with stubby wings, seen by astronomers, was observed off and on for about a week and seemed to flash red, green, and white as do many UFOs of the 1960s; on April 19, 1897, it looked almost 200 feet long and showed flashing colored lights to citizens of Sisterville, West Virginia.

Summer 1875, Bonham, Texas, in daylight—a fast-moving round, oval, or cigar-shaped object that frightened folks into fleeing indoors; 1898, September 4, Lille, France—a red object in the sky was watched for ten minutes; 1895, August 31, Oxford, England—a disk rose above trees and disappeared; 1897, April 15, Benton, Texas—a cigar-shaped object was called "a magnificent sight"; 1888, January 8, over Italy—luminous bodies flew through the sky.

"In the last twenty years of the 19th century," writes Jacques Vallee, "we have found 84 observations of interest, 34 of which were published in full detail in

the scientific press." On April 24, 1874, a Professor Schafarik in Prague (now the capital of Czechoslovakia) saw an object of "blinding white . . . [it] crossed slowly the face of the moon." He added: "I do not know what to say about it."

Men still do not know what to say about UFOs.

Some IFOs are American space vehicles. A Lunar Orbiter III took this picture of Kepler Crater (center of photo) on moon.

NASA Photo

19 Could UFOs Be Bugs?

FLYING ANTS? Could they be some UFOs? It sounds impossible, but they just could be. Flying ants could be at least a few of the UFOs no one can identify.

That's the word from Norton T. Novitt, of Denver, Colorado, a scientific illustrator. Mr. Novitt's hobby is the study of the electric properties of insects.

He thinks that insects can, under certain conditions, attract to themselves electrical charges great enough to give off lights.

Mr. Novitt's story was reported September 21, 1966, in newspapers of the U. S. by the Associated Press.

Three years earlier, Gene Foster of the AP wrote, Mr. Novitt was member of a Denver moonwatch team. This was a volunteer group that helped keep track of some of the large artificial satellites now orbiting the earth.

Mr. Novitt set up a telescope with which to find out if he could see a satellite during the daytime. He saw first one, then two, UFOs. They were bright—even glowing. They were scooting through the air. They descended almost to the ground.

He moved from the telescope and looked over it.

He was surprised. What looked like the place where the UFOs had landed was in front of a nearby garage. He went over to the spot.

There were two flying objects on the ground: Winged ants.

Mr. Novitt thought the bright glowing he had seen from them came from the sun striking their iridescent bodies.

Some ants do sprout wings during their mating season. They may fly together in great swarms. The result of the mating and the swarms is that new ant colonies are established.

The Associated Press told what happened next:

"He [Novitt] wondered what these giant swarms would look like at night if they could glow.

"To find out he glued 24 ants around the outside of a ping pong ball. A static electric generator was connected to the ball with a thin wire. The ball was suspended from the ceiling of his home laboratory with threads.

"Sure enough, when he cranked the generator the entire ball seemed to glow with a dim blue light. The bodies of the ants were discernible as brighter specks

of light as the electricity drained off them into space.

" 'It's simply an emission of electric corona light,' he explained.

"The ball hovered, moved erratically as pulses of static electricity drained off with differing intensities from the ants. It also gave off a crackling sound. Novitt said a swarm of several million ants would emit a very loud, humming or buzzing noise.

" 'No new scientific principles are involved,' he said. 'It is rather an application of a natural combination of the principles of three sciences—meteorology [atmosphere electricity], physics [electro-statics of assembled small airborne objects] and entomology [gathering of insects].'

"The Denver experimenter believes there are at least four ways in which ants apparently can pick up a glow:

"Individual ants become charged on the ground and then join a swarm, creating a mass of many different electrical charges.

"Ants fly upwards through successively more highly charged layers of air.

"Ants create their own static electricity by rubbing together in flight, much like a person does when he shuffles across a rug.

"Ants often swarm right after a thunderstorm which has left the air saturated with a different kind of charge than there was just before the storm.

" 'Logically,' he says, 'this may explain many of

the characteristics of the [UFO] phenomena such as materialization and disappearance, hovering and departure, glowing and pulsating lights of various colors, apparant high velocity rotation of the objects, varieties of shapes and sizes, humming noises, pitting of ground surfaces, scorching of vegetation, residues of chemical substances, seasonal appearance in late summer and Indian summer, and lack of communication with the airborne objects.' "

In March, 1967, Mr. Novitt added the suggestion that some UFOs were clouds of gossamer (spider silk) that "sparkle and glow with static electricity." Young spiders—spiderlings—migrate by spinning strands of silk that waft them into the air, and carry them on flights of up to 200 miles. Mr. Novitt believes that static electricity, discharged as corona light, could cause the gossamer threads to glow. In case the spiderlings were congregated closely, there could be quite a glow. Whole clouds of spiderlings have been seen; when they eventually land on earth they sometimes pile up their abandoned gossamer in great masses of fine silk threads.

Some scientists in the past have said that some UFOs were caused by flying clouds of insects. Mr. Novitt has added suggestions as to how the ants or other insects might pick up even more brightness—and glowingness—than we knew they had. This would make them even more visible. Some UFOs, at least, could be the bugs that are all lit up.

20 The Romans Saw a Shield in the Sky

"AND I LOOKED, and behold, a whirlwind came out of the north, a great cloud and a fire infolding itself, and a brightness was about it, and out of the mist thereof as the colour of amber, out of the midst of the fire."

That is the fourth verse of Chapter I of the Book of the Prophet Ezekiel in the Old Testament.

During the current crop of sightings of mysterious objects in the sky, many men have looked up records to see if there have been such sightings over the centuries.

There have been.

People, it turns out, have been seeing strange, moving, brightly lit, unexplainable objects in the sky for about as long as we can find any records.

A circle of fire in the sky, for instance, was seen by

ancient Egyptians, according to a papyrus from the reign of Thutmose III, about 1504–1450 B.C., or some 3,500 years ago. This flying circle was silent—so the hieroglyphics on the papyrus tell us. After some days, the papyrus says, "these things became more numerous in the sky than ever. They shone more in the sky than the brightness of the sun. . . . The army of the Pharoah looked on with him in their midst. It was after supper. Thereupon, those fire circles ascended higher in the sky towards the south. . . ."

In our present state of knowledge, not too much emphasis should be placed on what was seen in the sky in ancient times. For one thing, our translations of old languages are not 100 percent accurate. For another thing, many ancient descriptions of mysterious objects in the sky were descriptions of comets, meteors, or other natural objects. For another thing, some men of olden days were constantly looking for portents in the sky—there was a good deal of belief in the supernatural—and they sometimes *wanted* to see things that may or may not have been in the sky.

In spite of all this, it is amazing how many puzzling things our long-ago ancestors did behold in the air above them. Two hundred and eighteen years before Christ, the Roman historian Livy reported, a shield flew through the sky at Arpi. A Roman shield is about as near to a saucer shape as you can get. The Romans on another occasion saw ghost ships in the sky and on yet another occasion luminous lamps (like today's

glowing lights on UFOs). One writer, Jacques Vallee, thinks the Romans had a number of sightings of flying objects around 220 B.C. comparable to the recent wave of sightings in the U. S. If the Romans had had better communications, Mr. Vallee thinks, they themselves would have been impressed with the wave of UFOs. But they had no phones, telegraph, radios, TVs, or newspapers, no printing, and certainly no communications satellites, and only a limited number of their famous roads—and so a sighting of something mysterious in the sky would be known only to a few people in a neighborhood and would go no further. Incidentally, the communications systems of the 1960s—they blanket the globe—are a big reason why so many observations of UFOs are reported nowadays. For all we know, there could have been just as many mysterious objects in the sky throughout man's history—without a communications network for men to tell each other about them.

Ancient Ireland, about A.D. 956, had—like Rome—a rash of UFOs. This, Frank Edwards writes in *Flying Saucers—Serious Business*, we know from manuscripts of that era, including one with a long name, the *Speculum Regali in Konunga Skuggsa.* It reports "demon-ships" in the sky. The ships had men or manlike creatures aboard, the manuscript says.

Long before, in A.D. 60, something had been seen speeding across the skies of Scotland at night, Jacques Vallee writes. Scotland, he says, had another visitation

of ships in the air in A.D. 763. In 919, people in Hungary saw round, shining objects moving back and forth in the sky. In 1015, above Japan, two objects appeared to give birth to smaller luminous ones. At Cairo, Egypt, in August 1027, there were UFOs that were reported as noisy—one of the few times any sounds from flying devices were noticed by men of ancient times. In 1133 in Japan, a large silvery disk was seen to get near the ground.

In A.D. 776, what were called two large shields in the air were beheld in Europe. In 1160 in Thann, Alsace, a chapel was built on a spot where three lights had been observed over a fir tree. In 1290, over Byland Abbey, Yorkshire, England, a flying silvery disk was seen—a similar UFO is reported in a number of old records. In 1461, over Arras, France, an object shaped like a ship was seen; a fire issued from it. A round shape with a rotating light beam was seen over Germany in 1520. In Zurich, Switzerland, a drawing shows spheres and disks seen in 1561.

An astronomer, Edmund Halley, on March 6, 1716, saw an object in the night sky so bright that he could read print by it; it stayed two hours. (He was the man who previously had calculated the orbit of the great comet of 1682, and so it became known as Halley's Comet.) In 1752 in Sweden there appeared "luminous spheres coming out of a bright cylinder." At Windsor Castle, England, at 9:25 P.M. on August 18, 1783, Tiberius Cavallo saw a strange luminous phenomenon.

Over Greenwich, England, on August 30, 1783, a UFO seemed to produce eight satellites. From 1760 to 1870, reports are scarce; but a number of them describe round UFOs seen during the daytime. Other sightings, in the late 1800s, are described in Chapter 18. "We have on file," says Jacques Vallee, "more than 300 UFO sightings prior to the 20th Century." Even though the ancient observations should be taken with a grain of salt, they do prove one thing: Modern man is not unique in seeing puzzling and unexplainable things in the sky.

21 A Flash in the Sky That Thousands Saw

THOUSANDS OF PERSONS—it could have been millions—saw a very bright object flashing across the sky the night of April 25–26, 1966. They saw it in Canada. They saw it in the Carolinas, Ohio, New York State—and at points in between. They saw it in New York at about 8:15 P.M.

The object sped across the heavens and entered the earth's atmosphere, scientists estimated, at 126,000 miles an hour (or 34 miles a second). That's thirty times as fast as the fastest airplane speed ever—the 4,233 miles an hour reached November 18, 1966, by Major William J. Knight in the X-15 No. 2, one of our rocket space planes, from Edwards Air Force Base, California. The figure of 126,000 miles an hour is also over six times the speeds at which our one-man Mercury or two-man Gemini spacecraft orbited the earth.

The thing hurtling across the black sky before uncountable eyes of men, women, and youngsters put on a good show, and not only because of its astronomical speed. It was brilliant, "at least 100 times brighter than Venus, when that planet is at its greatest brilliance," said Dr. Thomas D. Nicholson, chairman of the Hayden Planetarium, of the American Museum of Natural History in New York City, "and about 10,000 times brighter than Sirius, which is the brightest star we see at night."

It displayed a fiery tail of yellow streaks.

Its color seemed to change. It was called green, red, a multicolored streak, a blue flame, a bluish-greenish-whitish object. It was said to leave a red, white, and blue vapor trail.

It burst into hundreds of pieces—and scattered.

Scientists agreed it was meteor or a meteorite.

A meteor is a shooting star that streaks across a bit of the sky and burns out. A meteorite is a meteor that hits the earth. It can put on a spectacular fireworks display (as did the object seen by so many people) as it passes through the earth's atmosphere.

Eight billion meteors strike the earth's atmosphere every day, the National Geographic Society says, but only five or six strike the ground. Intense heat from air friction vaporizes the others.

It could have been a fireball or a bolide. In either case it would still have been a meteor. A fireball is a very bright meteor. A bolide is a meteor that makes

a noise at the end of its trajectory. William Wensley and his son Walter, thirteen, of Newburgh, New York, said they heard two explosions. The meteor was spectacular. It caused thousands of its viewers to goggle and gasp. Many phoned the Air Force, newspapers, the Coast Guard, and the police.

A bank president said it looked "like a Roman candle. Sparks were flying in every direction. It left what looked like a jet trail in the shape of a corkscrew." A college student said the trail of the meteor was "light blue to white with orange-blue sparks." Said a former pilot, "I could see pieces of flaming debris flaking off in back of it, like the sparks from a sparkler." A policeman said that "it looked like a parachute flare, white hot."

If the scientists agreed, as they did, that the sparkling display of fireworks was a meteor or meteorite, they disagreed on other details.

Where did it land—if it did? Some said New York State; others, New Jersey; others, Maryland; another, "somewhere in Canada or Vermont."

How big was it? The size of a walnut, said the U. S. Naval Observatory in Washington, D.C. (An ordinary shooting star may be smaller than a marble and may weigh only a fraction of an ounce.)

"Less than the size of a football," said Dr. Fred Laurence Whipple, director of the Smithsonian Astrophysical Laboratory in Cambridge, Massachusetts, "because if it had been as long as a football, the glow

would have been as bright as the moon, and no one said it was."

Several hundred pounds in weight was the estimate of Dr. Thomas D. Nicholson, the Hayden Planetarium chairman, who had figured the object was 100 times brighter than Venus.

If this was a large meteor, it might have been pieces of a broken-up planet or asteroid. An asteroid is a miniature planet, and also is called a planetoid.

The meteor of April 1966 showed one thing: The differences of opinion that can exist even about so well-known and so common an object as a meteor.

There are 17 showers of meteors every year. Astronomers estimated there were 1,000 meteors a minute in a November 1966 shower. "It looked like an umbrella," said Gene Carpenter, who watched the shower from a mountain outside Phoenix, Arizona. "You could see them start. With two or three of the bigger ones you could see a trail of dust."

Said J. Allen Hynek, the investigator of UFOs for the Air Force: "It was the brightest Leonid meteor shower since 1896." The shower gets its name because its blazing particles seem to radiate from the constellation Leo.

The National Aeronautics and Space Administration fired aloft, from the White Sands Missile Range, a Nike-Apache sounding rocket to try to capture some of the pieces of meteors before they flamed. This, you

could say, was man's first attempt to catch a falling star. It did not work.

What are meteors made of?

Speaking on the occasion of the Perseid meteor shower in August 1966 (a shower that appeared to come from the constellation Perseus), Dr. Franklyn M. Branley, of the Hayden Planetarium, said that meteors are the debris of comets that once moved in the same orbit as the meteors. Composed of gases and bits of cosmic debris, comets are unable to hold their particles together because of their low gravitational field.

"The material producing a meteor," Dr. Branley says, "is probably no more substantial than cigarette ash."

There are more than enough meteors that appear singly or in showers for them to be the source of some reports of UFOs.

Dr. Branley's suggestion that meteors may be made of fragile material raises the possibility that some UFOs could be equally evanescent: You could see them, and then they could vanish into nothingness forever.

22 UFOs Today: Heard as Well as Seen

ONE WITNESS, Eddie Laxson of Temple, Oklahoma, drew a sketch of the UFO he saw: A fish- or football-shaped UFO about 75 feet long and about 12 feet in beam. It had, he said, an aluminum body and brilliant white lights in front.

Laxson's flying saucer plus a number of others were part of a boom in UFOs in the southwestern United States. There in 1966, sightings were frequent and detailed, and the Southwest had become the busiest part of the nation so far as seeing UFOs was concerned. After Kenneth Arnold saw the first flying saucers in 1947 in the State of Washington, the Northwest had had a cycle of visits by UFOs; and along with the Exeter, New Hampshire, flying saucer, New England in 1965 became a hot spot. In 1965–1966–1967 it was the Southwest's turn to be host on repeated

occasions to the aerial flying circus from no one knows where.

Eddie Laxson, the man who drew the big football-shaped UFO, is fifty-six years old and is an instructor in electronics at Sheppard Air Force Base, near Wichita Falls, Texas. He is therefore acquainted with airplanes. He said he got within 80 yards of the UFO on U. S. Highway 80 southwest of Temple, Oklahoma, at about 3 A.M. on March 23, 1966. He says he saw a man—a perfectly ordinary earthling—kneeling by the UFO. Laxson thought the UFO was one of ours. Said he, "It's an American piece of machinery. It's nothing foreign." It took off straight up, he said, with a noise like a "high speed drill," and sped away.

After the outbreak of flying saucers over Texas and Oklahoma, *Houston Post* reporter Cleveland Grammer talked to witnesses and noticed that they agreed on details like the shape (thick in the middle and tapering at the sides).

C. W. Anderson of Snyder, Oklahoma, had to stop because of a blinding light in the rear-view mirror of a truck he was driving. It came from an object hovering a short way behind the truck. Anderson said he watched for about two hours another such object near Randelett, Oklahoma, just before dawn on March 29, 1966. It was, he explained, "kind of football- or cigar-shaped."

Aboard the U. S. Coast Guard Cutter *Legare*, at dock at Freeport, Texas, on March 20, Radioman First Class Glenn A. Mushett, on watch, saw through

binoculars a large, strange, glowing, orange, oval object. It was, he said, "round and higher in the middle." He saw windows or portholes and thought he saw something moving inside them. "It was kind of hazy inside. I didn't believe in that stuff [UFOs]," he said. "I'm still not sure." Two other Coast Guardsmen also saw the UFO.

On the prairie not far from Freeport, on September 3, 1965, two Brazoria County Sheriff's Deputies had got a close look at a UFO. That was the very same night the Exeter, New Hampshire, UFO made an appearance (Chapter 14) to Norman Muscarello. Chief Deputy Sheriff Billy E. McCoy, thirty-eight, a member of the Brazoria County Sheriff's department, and Bob Goode, fifty, a lawman for ten years, saw an object that tapered toward both ends.

It was "about 200 feet long, and 40 to 50 feet thick in the middle"—one of the biggest UFOs ever described. How did the officers judge its size? The UFO buzzed their car—passed 100 feet high right over the car on State Highway 36 between Damon and West Columbia, Texas, within easy driving distance of Houston. On one end it had a bright purple light, on the other a fainter blue light. Both lights were vertical and pulsating. Goode, driving, said he could feel heat from the UFO. "It was real warm," he commented.

"I have always been a skeptic about these things [UFOs] till it happened to me," McCoy commented. "And I'm not a skeptic anymore."

On March 24, 1966, eleven persons, including

State Highway Patrolmen Buddy Means and Glenn Lisso, watched a bluish-and-silver-lighted round object over northeast Victoria, Texas. Seven teenage boys saw it first and pointed it out to the patrolmen, who were cruising in the neighborhood. "We saw this blue glow, in the direction the teenagers pointed," said Means. "We looked up in the northwest and here was this blue glow. We watched it for four or five minutes and then it disappeared. It left toward the northwest and advanced rather suddenly." The UFO appeared, as sketched by one of the lads, as flat beneath and dome-shaped on top. It seemed to spin while hovering.

Another UFO was seen near Bryan, Texas, the same evening.

The daylight sighting of a UFO by W. T. Jackson and Kelly Dikeman in Baytown, Texas (Chapter 8) came late in 1966. The Southwest's UFO boom continued into the new year. On January 21, 1967, Houston police received eight reports of UFOs within an hour. A psychologist with the University of Houston, Dr. Albert Kuntz, saw one from 7 until 8:30, P.M., when fog blotted it out. He said: "It was a lighted object moving at tremendous speed. It stopped, it appeared instantly, then retraced. It was erratic in terms of the movement it made. It looked like a boomerang. Occasionally you could see what appeared to be a red light or lights."

Besides the rash of observations in the Southwest,

there were in 1966 and 1967 many sightings elsewhere in the nation. This in spite of the fact that it appears many observers are keeping their mouths shut. Said a farmer in Michigan, after he had a look at an Unidentified Flying Object, told about it, and took a ribbing: "If that thing lands right there by that pump, I'd never say a word!"

The kidding or even ridiculing of eyewitnesses is a big enough problem so that the University of Colorado, as it investigates flying saucers, has announced that eyewitnesses can report to it—and their names will be kept quiet.

By today, enough descriptions are in so that definite characteristics can be listed for the latest 1967 or 1968 model UFOs:

• Changing lights, such as those that varied their color over South Dakota (Chapter 1) and those pictured by the New York *Daily News* photographer (Chapter 5), are common. Aboard UFOs, lights of many colors that appear to change, as from red to white to green, are often observed.

• By daylight, white UFOs, the color of the one observed by W. T. (Red) Jackson and Kelly Dikeman (Chapter 8), have been reported a number of times. UFOs seen by day are described as white, aluminum, the color of magnesium, or dull chrome.

• Size ranges from small, or two feet in diameter, to Bill McCoy and Bob Goode's "200-foot-long" UFO. McCoy and Goode had a close-up look—hence

a better-than-usual chance to estimate size. An object seen in the sky at an unknown distance from the observer and away from reference points is impossible to estimate accurately.

• Noises made by UFOs vary. Many observers, over the years, have reported no sounds whatever from UFOs they saw. This situation seems, if anything, to be changing. With some UFOs still described as silent, others have been heard to buzz, or to whirr, or to hum, or to whistle.

• "Actions of the reported UFOs continue to be erratic, even 'playful' or 'curious' in recent cases," the weekly magazine *U.S. News & World Report* said in its issue of August 22, 1966. "Most are first seen while hovering near some man-made object, or moving along beside a plane, auto, or train. Those seen in flight nearly always seem to move in zigzag fashion, wobble, oscillate from side to side, or pause to bounce up and down. Then they tend to dart off with extremely rapid acceleration, and disappear entirely."

• "No 'little green men' have appeared this year, in reports to the Air Force," says *U.S. News*. "In the past, usually from Europe or South America, there have been occasional references to small, web-footed creatures emerging from parked UFOs. Officials dismiss such reports as merely hoaxes or hallucinations."

• Many UFOs, *U.S. News & World Report* went on to say, are seen nowadays to follow new expressways.

• Shapes of UFOs vary these days, but not too

much. Cones, spheres, footballs, and disks often are mentioned. And the witnesses during the boom in UFOs in Texas and Oklahoma who described their UFOs as "football-shaped" or "cigar-shaped" or "tapering" were describing UFOs of very common shapes in the late 1960s.

23 What to Do If You See a UFO

YOU MIGHT be the one to furnish a clue that would identify a UFO. I asked a scientist what you should do if you saw one. His answer showed how anyone could help identify strange objects in the sky.

The trick is to be prepared, he said, when you see a UFO, to try to find out some facts about it that ordinarily would not be observed.

There is no shortage of people who have seen UFOs. And these UFO observers have been shown to be intelligent, educated people, many of them. Yet almost all of them have had one handicap: They did not know what to look for.

When, therefore, a UFO came into range of their eyesight, they looked—and maybe gaped—and saw it was big. But how big? They saw it was bright—maybe the brightest thing they had ever seen—but

what were the colors in its spectrum? (To a scientist the colors in a spectrum tell what a UFO is made of.) Many viewers have described UFOs as metallic. Were they really metal?

Opinions about UFOs, as this book indicates, are abundant. What is needed are facts. When you see a UFO you have only a few moments, or a few hours at the most, to learn all you can about it. And you are not likely to have a second look.

That is why the scientist stresses that you must "Be prepared for that fleeting moment, so that you'll learn something from it that no one before you has learned."

Here is what the scientist told me he would do if he saw a UFO—"That is, if I were able to think at the time of observation":

How big is your UFO? Estimate—don't guess—its size, and you can do this without any tool handy. Look at the UFO through your fingers held at arm's length. Note its size in relation to your fingers. Compare the UFO's size—in your mind's eye—to that of any of these things held in the fingers at arm's length: the head of a pin, a dime, quarter, half-dollar, silver dollar, baseball, grapefruit or basketball.

How far away in your UFO? Again, estimate rather than guess. Watch for it to pass in front of an object whose location is known. Does the UFO sail between you and a hill? In front of a tall building? Beneath the clouds? This puts an upper limit on its distance from you. The flying disks that Kenneth Arnold saw in 1947

(Chapter 4) passed in and out among mountain peaks that Arnold knew well. Therefore, he could estimate the distance of the disks. In The Case of the Two Sergeants (Chapter 9), the tale told by the sergeants got its entire meaning from the fact that their UFO came down beneath the clouds, and therefore could not have been over 4,700 feet high (the height of the clouds). The height of the clouds on any day is always found in Weather Bureau records.

Remember, if a UFO passes in front of an object in a known position, the UFO cannot be farther away than the object. If, at the moment when the UFO is passing in front of something you know, you measure the UFO between your fingers held at arm's length, you will have something concrete to go on in estimating its size.

Is your UFO magnetic? If you have a compass handy, give the UFO a compass test. A compass test may indicate whether or not a UFO you are watching is magnetic. If you have a compass in your pocket, take it out and look at it. See if it is pointing away from magnetic north. Is it pointing to the UFO, perpendicular to a line between you and the UFO? Does the compass needle move as the UFO moves? Does the compass needle wave? Is the waving related to the distance to the UFO? "Don't hold the compass in your hand," the scientist said. "Set it on the ground, since your hand will no doubt be shaking."

What does your UFO do to your car or radio? UFOs

have been reported to interfere with electrical systems, like the ignition systems of automobiles. UFOs have been said to kill the engine, if it's running, and to prevent a car from starting if the engine is not running. So test your UFO: try to start your car if it is not running. If it fails to start, try again as soon as the UFO has left. UFOs have been reported to interfere with radios. Turn on your radio. See if there is static. If there is, listen to and compare the approximate volume of the static in relation to the regular programming, and the patterns, if any, present in the static.

Of all things you can do to check on a UFO, nothing perhaps is more important that a spectroscopic examination of it. Test the color spectrum of your UFO. Observe its colors and list them, in order, through a small spectroscopic device called a transmission grating. You can do it easily.

A transmission grating is a big name for a tiny object: A grating ruled on plastic. The mount may be the kind you use for those color transparencies you take with your camera.

The transmission grating can be the size of a 35-mm. color slide, weighs next to nothing, can be slipped into your pocket or purse, and can be grabbed in a second if you see a UFO. (You can get a transmission grating for $1 or less by writing to any scientific supply company.)

What you're going to see through it is the spectrum of your UFO. But you will have to know how to use

the transmission grating before you see your UFO. It will take a little effort to get the hang of it, but it works.

With one eye closed, hold the transmission grating to the other.

Look through it at such things as street lights and signs and household lights.

Without moving your head, or the transmission grating, look about 45 degrees to the left or right, and you will see the spectrum of the object you are looking at—a series of colors having the shape of the object you are viewing.

If you see a spectrum of the discrete colors red, red, yellow, you are probably looking at a neon sign. If the neon sign is bright, and you are in the dark, you may also see additional colors.

If you see red, yellow, green, blue, each color merging into the other, you will be looking, probably, at an incandescent lamp. You will be seeing a continuous spectrum, the spectrum of a hot solid body—in this case, tungsten. Another hot, solid body with a continuous spectrum is the sun.

If you see the discrete colors yellow, green, violet, you will be observing a mercury vapor lamp, a bluish-appearing lamp that is common today in street lighting.

If you see an intense red line, you may be looking at something composed of hot air. You see this line in the spectrum of ordinary lightning.

After practicing on everyday objects, you are ready

to use the transmission grating on a UFO—if you are lucky enough to see one. You will be familiar with ordinary spectrums, and you will recognize a strange spectrum.

Be sure to write down the spectrum of any UFO you observe as soon as possible—or, better, take a photograph with the grating over the camera.

"The spectral properties of a luminous discharge," the scientist told me, "are a signature. If a UFO turned out to be an unknown material—at a high temperature—if you came up with an unknown spectrum—we'd have something to get excited about."

There are other things to keep in mind if you sight a UFO. They are covered in an elaborate questionnaire, based on long experience, that the Air Force uses to try to bring out all possible information from eyewitnesses of UFOs.

Be sure, of course, to check the time of your observation of the UFO—both its start and finish—with your watch.

Be sure and make a note of weather conditions—clouds, rain, wind, etc.

Be sure—this seems perfectly simple, but is an easy one to forget—to locate yourself exactly. Remember exactly where you were and which way you were facing when you watched your UFO.

Notice as carefully as you can the shape of your UFO. Several shapes to keep in mind are listed in a Library of Congress Legislative Reference Service

Report, dated May 5, 1966, and entitled "Facts About Unidentified Flying Objects." The report shows pictures of UFOs in the shapes of disks, cigars, aircraft, and even propeller-shaped and boomerang-shaped.

The Air Force also asks sighters of UFOs the number seen, the formation (if more than one), what tail or exhaust there was, and what sound (if any) was heard. The Air Force asks the color. You can see how much it would help if you could provide the spectrum of the UFO. This is a solid fact. If all you can say is that the UFO seemed "bluish" to you, that amounts to only an opinion.

The trouble up to now has been that we have tried to figure out what UFOs are without the facts to go on. Lieutenant Colonel Lawrence J. Tacker, in *Flying Saucers and the U.S. Air Force*, points out that we've tried to identify UFOs "from human impressions and interpretations and not from scientific devices or measurements."

If you have prepared yourself, and if you check up on your UFO in the manner that the scientist I talked with suggests, you will be getting away from impressions and will be collecting facts. Facts that science can work with.

24 A Laboratory Explanation

MEN ACTUALLY have made UFOs of their own. By doing so, they may have shown how UFOs are produced in the skies above the U.S. It could be that they have discovered the explanation for many of the sightings that have puzzled and troubled so many Americans.

Men have produced their UFOs in a laboratory.

The laboratory is in Falls Church, Virginia, and belongs to a company called Melpar, Inc.

The head of a small group of scientists conducting experiments in the laboratory is Dr. Robert S. Powell. An article on the work of Dr. Powell and his associates appeared in *U.S. News & World Report*, March 30, 1967.

The flying saucers produced in the laboratory by Dr. Powell and his colleagues are created by igniting ammonia vapor with a high-voltage spark.

The result is a mass of glowing gas—something that looks exactly as countless UFOs have been reported to look.

Not only does the laboratory UFO look the same as a sky-borne UFO, in many ways it behaves the same.

In the laboratory, Dr. Powell's man-made UFO darts. It soars off. It breaks up. Now you see it, now you don't.

It even hovers in one spot for several minutes.

It can be tracked by radar.

It affects the performance of nearby radios, as UFOs have been said to do.

In the laboratory, the UFOs developed are small—only an inch or so in diameter.

Could bigger ones be produced the same way—by igniting ammonia vapor with a high-voltage spark—in the skies?

They could be.

The gas ignited is similar to gas found in nature—it is often given off from swamps, over which UFOs have been reported. Ammonia fertilizers cover many fertilized fields. Ammonia is a basic fertilizer. Since World War II, the period during which the U.S. has had its parade of saucer sightings, the use of fertilizer—and of the ammonia fertilizers—on farm lands of the nation has skyrocketed.

The spark needed to touch off the gas? It could come from lightning. It could come from some kind of

electrical installation. (UFOs are often seen near high-power lines.)

Thus, under this laboratory explanation of the causes of UFOs all these could occur: (1) You could have UFOs from purely natural ammonia gas and natural sparks, i.e., lightning.

(2) You could have UFOs from man-made causes, i.e., ammonia gas from fertilizer and electrical discharges from electrical apparatus. In the period since World War II, the man-made causes that might cause UFOs to be seen have been increasing tremendously.

(3) You could have UFOs from any combination of natural and man-made causes—i.e., natural swamp gas touched off by a man-made spark.

It seems to me that an explanation that considers both natural and man-made causes could well go a long way toward explaining UFOs. When that explanation is based on something new that men all over the world have been doing, you feel that there well may be a connection between men's actions and UFOs. And since World War II, men have been building up their electrical power capacity all over the globe.

In the past, other scientists had succeeded in making in the laboratory some objects that looked like UFOs. But these required a constant source of energy.

Those developed at Melpar, Inc., need no constant source of energy. All they need, to be seen, to hover, to take off, to soar, to disappear, to show up on radar is just one initial spark.

Whether or not the Melpar UFOs can be duplicated by men outdoors is doubtful. It is very difficult, *U.S. News* points out, to work with gases in the outdoors.

But if it is difficult for men to work with gases outdoors, it may not be difficult for nature to do so. It may be very simple for nature to create UFOs outdoors just as they have been developed in the Virginia lab.

It may be that, a lot of the time, this is exactly what is occurring.

The space taxi is an IFO soon to be seen in U.S. skies as it shuttles men and supplies between the earth and an orbiting laboratory. Full-scale model above is in the Hall of Science in New York City.

NASA Photo

25 Watchers of the Skies See Few UFOs

THE SKIES are under continuous observation these days—by astronomers, by stations that track spaceships, by radar bases.

It is very rare for any of these sky-watchers to locate a UFO. Why don't they?

That is one of the questions the University of Colorado has in mind as it begins the nation's first scientific attempt to find out what UFOs are.

Astronomers are constantly seeing puzzling objects in the sky. They often say nothing about them till they have made definite identifications. Astronomers of course have found and labeled the universe of stars, and they keep finding there's more to the universe all the time. An astronomer making discoveries right now is Frank Low, at Rice University, Houston. Low uses a new cryogenic telescope (cooled to within 2 degrees

of absolute zero) to study the universe in infrared. He discovers stars invisible even with the largest telescopes of other types. Some of the objects he has seen—he has some unidentified objects of his own— he believes are stars and planets in the process of forming.

A brand-new discovery, by the French astronomer Audouin Dollfuss, is a tenth moon around Saturn. It is the 32nd moon known in the solar system, has been named Janus by Dr. Dollfuss. It may be a big snowball, the National Geographic Society says, "of loosely packed icy matter that reflects sunlight like snow."

Astronomers over the past 165 years have found something not previously suspected to exist, and still very little known: A host of minor planets, called planetoids or asteroids. There are about a dozen known asteroids that come close to the earth—closer than anything else in the heavens except the moon. They include Geographos (only one mile in diameter), Betulla, Amor, Icarus, Ivar and Eros. The asteroid Hermes in 1937 got within 485,000 miles of the earth.

Asteroids could be used as stopping-points for astronauts on long journeys through space. After men reach the moon, the close-approach asteroids, as those that get near the earth are called, will be the next easiest extraterrestrial bodies to visit. There are many more asteroids, or space islands, farther out—50,000 of them orbit between Mars and Jupiter.

Eros, one of the close-approach asteroids, is seen by astronomers to change dramatically in brightness.

They believe this is because Eros is a long object (15 to 20 miles in length) that tumbles end over end.

An asteroid 110 feet in diameter may have struck the earth, the National Geographic Society says, and made Arizona's meteor crater. Another, hitting West Texas around 50 million years ago, may have caused the jumble of shattered rocks called the Sierra Madera.

Asteroids are believed to be composed of rock and iron, and to have no water, air, or living organisms. Before the space age, they were neglected by astronomers. Now, as possible way stations for space travelers between the moon and distant planets, they are getting more study.

Radar does show some UFOs. It is highly scientific and highly developed, but it is not a perfect instrument, however, and it can fool you. Radar sends out waves whose echoes, when they hit something solid, bounce back and are recorded on the scope of the radar set. The waves can strike ice crystals in clouds and produce blips on the scope that look like a solid object in the sky—a UFO. Similarly, radar can pick up a flight of birds. A temperature inversion (a layer of warm air above cooler air) can bend the outgoing radar waves down to the ground so that they reflect on the radar set's scope what is on the ground and not in the air—i.e., a building on the ground can look on the radar set like a solid object, or UFO, in the air high above the ground.

The U.S. maintains lines of radar stations in the Arctic to warn of possible enemy planes approaching. These have had at least two false alarms. One occurred when radar waves, affected by a weather inversion, were returning blips on the radar screens as though a fleet of airplanes was approaching—what they really were showing were objects on the ground. Another time, our early-warning radar showed what looked like a massive flight of enemy planes or missiles—the radar was receiving echoes from the moon.

Radar in the past has provided course and speed of objects in the sky but has not been able to show altitude. A new radar air-traffic-control system provides altitudes—and so could pinpoint a UFO better.

The early-warning radar stations feed information into NORAD, the North American Air Defense Command (the U. S. and Canada), located near Colorado Springs, Colorado. NORAD, located inside a great hole tunneled out of Cheyenne Mountain, one of the Rocky Mountains, keeps track of all the man-made satellites in space. There were more than 1,100 man-made orbiting objects at last count. They included satellites, rocket boosters, fuel tanks, and a camera dropped by a Gemini astronaut. There will be five times as many in the 1970s. NORAD, with the help of 150 tracking stations around the globe, keeps Washington informed whenever a rocket or satellite goes up anywhere in the world, and tells what happened to it. When, in mid-February 1960, a fireball streaked

across the sky from Alaska to Los Angeles, NORAD knew it was a Russian satellite reentering the atmosphere. Another Russian satellite blew up in space not long ago, fractured into 124 pieces, and NORAD kept track of the pieces. Russia never breathed a word about it.

If UFOs are solid vehicles from outer space, I cannot understand why they don't register on our space-tracking network. You would expect many more UFOs to be seen by the space-tracking stations than by anyone else. If NORAD ever were to describe one UFO the way it described the exploded Russian satellite, the discussion about UFOs would be just about over.

Have our astronauts seen UFOs? No. At Lafayette College, Easton, Pennsylvania, where in April 1966 he received the first honorary degree of Doctor of Astronautical Engineering, Astronaut Walter M. Schirra discounted reports of Unidentified Flying Objects, but felt that they might exist. He said neither he nor any other astronaut ever had seen one.

"The universe is infinite and there may be life in other solar systems," Captain Schirra said, "but I don't subscribe to the reports we've seen of vehicles that just dropped in for an afternoon visit. I think it would be a rather long trip."

How long a trip would it be for an interplanetary spaceship to reach the earth? If the closest life is—as some scientists think—in a galaxy about 10 light years away, that would amount to about 60 trillion miles, or

about 650,000 times farther than the 90 million miles between the earth and the sun.

It would make Mariner IV's voyage to Venus (Chapter 16), the longest voyage yet for any of our unmanned spacecraft, look like an afternoon stroll. Venus at its closest is only 25.7 million miles away.

To reach the moon our Apollo astronauts will have to travel only 239,000 miles in each direction—less than half a million miles round trip.

When Charles Conrad and Gordon Cooper landed after their eight-day Gemini 5 flight in August 1965, they had set a distance record for astronauts: 3,338,-000 miles.

Still, whenever you think that tremendous distances or other problems would prevent spaceships from other planets from reaching earth, you are brought up short. You realize that the U. S. already is holding its first conferences on how to make manned missions to other planets a reality. Among others, the American Institute of Aeronautics and Astronautics (space and aviation engineers and scientists) is asking about interplanetary travel right now: "What do we know now? What do we need to learn? How will we learn it?" If beings on one planet (ours) can start planning interplanetary travel, why not beings on another?

Mars or Venus have been suggested as the most logical home ports of UFOs—that is, where UFOs come from. Charles Hugh Smiley has issued a statement about that. Dr. Smiley is professor of astronomy

at Brown University, Providence, Rhode Island, has been chairman of the department of astronomy since 1938, and has led 12 solar eclipse expeditions. His statement was sent to me by the Air Force. Here is part of his statement:

"There is a logical approach to this question as to whether or not UFOs have come from Mars or Venus. It is well known that if someone on the earth wants to send a space vehicle to Mars or Venus, there are specific favorable times, times when a body can be launched so that it will travel along a minimum-energy orbit, arriving at the path of Mars (or Venus) just as that planet comes to the same point. For example, favorable times for launching a rocket to travel to Venus have been listed as October 27, 1965, June 5, 1967, and January 11, 1969, and for Mars December 23, 1964, January 26, 1967, and February 28, 1969 (*Space Handbook*, Government Printing Office, 1959).

"Of course, there are similar favorable times for launching a space vehicle from Mars (or Venus) to the earth, and for each of these launching times, there would be a corresponding arrival time at the earth. These favorable arrival times come at intervals of about 584 days for Venus and about 780 days for Mars. . . .

"One could then choose intervals of 20 days, say ten days on either side of a favorable arrival date, and look to see how many UFOs were sighted in each such

'favorable arrival interval,' here named fai (plural fais). If there were no increase in the number of UFOs in these fais, then it would be unlikely that any considerable number of UFOs had been arriving from Mars or Venus. . . .

"This fai approach to the problem can be carried a step farther. One can make a list of the UFOs observed in the fais, and look at the record of each to see if the UFO was observed traveling in the direction it would have if it came from Mars (or Venus) in a minimum-energy orbit. . . .

"Now to look at the evidence! A list of UFOs sighted between September 8, 1956, and December 31, 1963, was examined. Nine fais of 20 days were found in this interval, five for Venus and four for Mars."

During those fais, or favorable arrival intervals from Venus and Mars, Dr. Smiley's figures showed, there were only ten UFOs reported altogether. Of them, five were reported during favorable arrival intervals from Venus, and five were reported during favorable arrival intervals from Mars.

More UFOs were sighted outside the favorable arrival intervals, Dr. Smiley noted. He studied other 20-day periods that were not favorable arrival intervals and found that UFOs arrived during these periods at an average of 1.88 per period, as against 1 per period during the favorable arrival intervals. In other words, UFOs were reported to be seen almost twice as frequently when conditions were not suitable for their

arrival from Mars or Venus as when conditions were.

"Thus," says Dr. Smiley, "the evidence seems to indicate that Martians and Venutians have not been arriving in large numbers if at all."

What of the direction from which the UFOs come?

Says Dr. Smiley:

"When one goes back to examine the direction from which the UFOs arrived, we find not a single case of the UFO coming in from the proper direction to indicate that it had originated on Mars or Venus."

Could they have come from somewhere else?

There may be life on the planet Jupiter, according to the National Aeronautics and Space Administration, April 12, 1967. Two of its scientists tried to produce an atmosphere like Jupiter's in a laboratory. They put together large amounts of ammonia and methane (a natural gas) because it is believed these occur in Jupiter's atmosphere. Into this atmosphere they discharged artificial lightning. Lightning is common on planets, and Jupiter is believed to have it. The lightning provided energy. The result was a chemical reaction that produced molecules of some chemical compounds known as building blocks of life—that is, these compounds are parts of living things. The experiments proved that the atmosphere of Jupiter might produce chemicals such as the forerunner com-

pounds of amino acids and of the nucleus of the living cell. Such chemicals are believed to have produced life on earth.

With the addition of only water, the building blocks produced in the simulated Jupiter atmosphere could be turned into even more complex organic (as of living matter) molecules. Jupiter may have water. The earth may have had an atmosphere of ammonia, methane, and water 4½ billion years ago. In this atmosphere, complex organic molecules are believed to have linked themselves continuously in millions of combinations in the earth's primordial oceans. Eventually, a long-chain molecule, able to reproduce itself, may have appeared, marking the origin of life. A similar series of events may have occurred on Jupiter.

Jupiter is the largest of the planets. It is 88,640 miles in diameter—over eleven times the diameter of the earth. Jupiter revolves around the sun once every 12 years—from a mean distance of 483,200,000 miles. Its atmosphere is so thick that we cannot see Jupiter's surface through telescopes, and only one possible surface feature has been observed: A red spot that seems to move its position.

The NASA scientists working on the problem of life on Jupiter were Dr. Cyril Ponnamperuma and Fritz Woeller.

We might have more living neighbors in space than some suppose. A theory that there are 600 million planets in the Milky Way that can support life, even advanced, intelligent life, was put forward in 1963.

Professor Lloyd Motz, a Columbia University astronomer, estimates that the Milky Way—the galaxy that includes the sun and the earth—contains 200 million suns, or blazing stars, in it. "If we suppose that the stars . . . have planetary systems like our own," he says, "we have, on the average, about three planets per star as abodes of an intelligent form of life." These planets, Professor Motz says, may be, and probably are, chemically and physically equipped to support life like that on earth. At three planets to each of 200 million stars (suns) that would be 600 million planets right in our own galaxy, the Milky Way—600 million starting points for astronauts from other heavenly bodies besides earth.

Dr. Harlow Shapley, director emeritus of the Harvard College Observatory, agrees with Dr. Motz about the possibilities of life on other worlds. On the ABC news documentary *We Are Not Alone*, based on the book of the same name by Walter Sullivan (and sponsored by the B. F. Goodrich company), Dr. Shapley said Mars might have some life on it. "My guess," he continued, "is that there are more than a hundred million planets that have living things on them. By living I mean like trees and grass and people. . . . I think at least that many, and I'm a very conservative person. Our galaxy is wheel-shaped, you know. It's flattened like this, but it has a big center and it has [a] hundred thousand million stars scattered all the way through it."

Walter Sullivan, on the same TV program, asked

Philip Morrison, professor of physics at Massachusetts Institute of Technology, what the people on other planets might look like. "I don't know," Dr. Morrison replied. "I think that more like us than one might believe. But less like us than the common run of what we would regard as human. Something in between.

"In other words, I don't think they'll be fifty-foot skeletal figures—long, towering—with long, wiry arms, and I don't think they'll be round spheres four inches in diameter.

"Simply for evolutionary reasons you've got to have a certain size, not too big, not too small. You've got to be big enough to have this complicated machinery in it, you can't be too small. It can't be too big or it's very hard to manage on a planet that had anything like the chemical composition we're talking about.

"Now some people go further. Some people say, yes, you see the number of fingers will not be five. I think it could be something like fingers, but I would be willing to believe it might be four, there might be eight. There might even be sixteen. But I don't think there will be five hundred, and I don't think there will be one."

Whatever intelligent creatures on other worlds might look like, they might be trying to communicate with us by sending out radio signals. Three radio telescopes on earth have been listening for such signals. They are the Jodrell Bank radio telescope in England, the Green Bank in West Virginia, and the one at

Arecibo in Puerto Rico. So far, we have picked up no extraterrestrial radio calls. But we have only listened in on two stars, and the universe is full of other possibilities.

26 "I'm Still Puzzled"—Hynek

WHENEVER you convince yourself that because of something—like the great distances in interplanetary space—there could be no such thing as UFOs from other worlds, then something comes along to make you wonder.

In 1967, it was a photograph—a picture taken by two brothers, one of them seventeen, and the other age fifteen, of a UFO near Selfridge Air Force Base, Michigan. It showed a somewhat football-shaped object, much like the one seen and sketched by Eddie Laxson (Chapter 22).

What looks like an antenna protrudes from one end of the UFO in the Michigan boys' photo, taken about 2:30 in the afternoon.

Professor Hynek, the Air Force consultant on UFOs, had the pictures examined at the University of Chicago for signs of a hoax. No evidence of a hoax was found

—at the time. Later, the Air Force was able to duplicate the photo with the same camera at the same location. It looks as though someone was playing tricks with the original photo.

Even the antenna shown in the photo may have been based on antennas reported in earlier sightings, and so may have been the shape of the UFO.

Earlier, Dr. Hynek had investigated some of the most publicized 1966 sightings of mysterious lights in the sky. These took place in March, over a swampy depression, near Dexter and Hillsdale, Michigan. Silent, glowing lights—red, yellow, and blue-green—were seen. Observers included a dozen policemen, an assistant dean and 87 girls of Hillsdale College, and a Civil Defense official. "Over and above the sincere and honest reporting by the young ladies at Hillsdale College," the Air Force said later, "certain young men have played pranks with flares."

Dr. Hynek said that one possibility (and only one) was that the supposed UFOs were luminous swamp gas, and that photos made of the UFOs were proved to be time exposures of Venus and of the rising moon.

"A swamp," says an Air Force explanation, "is a place of rotting vegetation and decomposition. Swamps are not a province of astronomers. Yet, the famous Dutch astronomer Minnaert, in his book *Light and Colour in the Open Air*, describes lights that have been seen in swamps by the astronomer Bessel and other excellent observers. The lights resemble tiny flames

sometimes seen on the ground and sometimes rising and floating above it. The flames go out in one place and suddenly appear in another, giving the illusion of motion. The colors are sometimes yellow, sometimes red, and sometimes blue-green. No heat is felt, and the lights do not burn or char the ground. They can appear for hours at a stretch and sometimes for a whole night. Generally, there is no smell and no sound except for the popping sound of little explosions such as when a gas burner ignites.

"The rotting vegetation produces marsh gas which can be trapped during the winter by ice. When the spring thaw occurs, the gas may be released in some quantity. The flame, Minnaert says, is a form of chemical luminescence, and its low temperature is one of its peculiar features. Exactly how it occurs is not known and could well be the subject of further investigation.

"The glowing lights over the swamps near Dexter and Hillsdale were observed for two or three hours, and they were red, green, and yellow. They appeared to move sideways and to rise a short distance. No sound was heard except a popping sound."

Not everyone who had seen the strange lights in the Michigan night sky agreed with the Air Force and Dr. Hynek that they might be swamp gas. This does not faze the Air Force. It does not faze Dr. Hynek. Both take the attitude their critics may be right.

Says Dr. Hynek:

"I don't want people to think I automatically pin

the 'crackpot label on anyone who sees something puzzling in the sky. I've had too many people—sincere and intelligent people—tell me, almost apologetically, of seeing something they couldn't explain."

Dr. Hynek's view is shared by L. Mendel Rivers, of South Carolina, chairman of the House Armed Services Committee. Said he of UFOs: "We can't just write them off. There are too many responsible people who are concerned."

Dr. Hynek is delighted that a scientific examination of the subject is under way at the University of Colorado. He took his wife out to dinner to celebrate when he heard about it. He suggests two tips for the investigators: Feed all the known data on UFOs into computers, so details of new sightings can be compared at once with old reports. Equip investigators (and local police forces) with good cameras so that more and better photos than any so far may be obtained. "I carry a camera in my briefcase at all times," he adds. Another possibility is to locate high-powered tracking cameras around the country. Another is to put them into our fastest jet planes and let the planes chase UFOs.

Dr. Hynek estimates that he himself has read of or analyzed 15,000 cases of UFOs. In spite of his long experience with UFOs, several hundred of the sightings remain puzzling to him. Of the several hundred, he says, perhaps one in 25 "are bewildering." Says he, "I have wanted to learn much more about these cases

than I have been able to get from either the reports or the witnesses. There is this residue of most interesting reports that still intrigue me as a good mystery story intrigues me.

"I'm still puzzled—you might call me a study in puzzlement."

As this book went to press, the University of Colorado, according to Mr. Robert Low, was well started on its investigation of UFOs. "We're making good progress," Mr. Low said, "and have investigated dozens of cases. We're not discounting any kind of UFO reports, including contact reports." Contact reports are those in which persons seeing UFOs assert they saw—or contacted—beings from other worlds.

Colorado's two main sources of information on UFOs, Mr. Low explained, are the Air Force (Chapter 10) and the National Investigations Committee on Aerial Phenomena (Chapter 13).

A network of people all over the U. S. is keeping Colorado informed, Mr. Low said. He himself is convinced some reports of UFOs are accurate, he explained, and some reports are hoaxes or otherwise are no good. "The question is," he says, "how many are correct and how many are hoaxes?" Mr. Low says that the University of Colorado has reached no conclusions on UFOs—whether they're from outer space —or wherever. "There are theories," he explains, "but the physical scientists would like to get a UFO into a laboratory to take a good look."

The night of April 25, 1966, a UFO trailed the airplane, a Convair, in which Governor Hayden Burns of Florida was traveling. Jane Wood sent me the report. The UFO, described as "twin bright globes of yellow," followed the plane. Everyone in the governor's party saw it.

Co-pilot Herb Bates was first to see the UFO—shortly after the plane left Orlando. "It stayed with us," he said, "for at least forty miles." He thought the UFO was 15 to 20 miles away and moved at about the speed of the Convair, 230 miles an hour. There had been radio reports that same night of a meteor over the Eastern U. S. (Chapter 21); a reporter on Governor Burns' plane said the unknown did not look like a meteor to him. When the Convair turned to intercept, the UFO climbed fast and disappeared. Besides the governor, his wife, and the pilot and co-pilot, others watching included Frank Stockton, Charles Harvey, John Hopkins, State Patrol Captain Nathan Sherren, and four reporters.

In 1967 more sightings were reported: One over Hartford, Connecticut, by a man who said it was "like a fruit bowl" 50 feet above him; it had, he said, silver edges and a clear bluish-green light in the center. Less than 25 miles from Wright-Patterson Air Force Base in Ohio and the Air Force's Project Blue Book, Mrs. Robert W. Smith, her husband, and two daughters watched—for about 45 minutes—a round, brightly-lit object. It had a bright white light, Mrs. Smith said.

"I was so fascinated that I got out of the car and stood in the driveway waving my arms as it seemed to dip. All of a sudden—pfft—it took off straight up." She said it gave off a high-pitched whine and frightened the family poodle. At the Wanaque reservoir, New Jersey (Chapter 3), in March 1967, UFOs returned. Sergeant Benjamin Thompson again saw one over the water. He said it was circular and ringed by a glow of bright lights. "It had a red glow and stayed there going up and down like a yo-yo for about fifteen minutes. It would almost touch the water then go back up about forty feet."

As 1967 wore on, Mrs. Patricia Villegas from Mexico City sent me a clipping about a UFO seen by an Aviateca Airlines pilot, Captain Alfredo Castaneda. Passengers and crewmen said it was shaped like a top and had a red ball on the upper part; Captain Castaneda estimated it was traveling faster than the 250 miles an hour his plane was making. And on the night of March 8, 1967, scores of people in Kansas and Illinois saw UFOs. In northwest Kansas one was heard to sound like a large vacuum cleaner, to be brilliantly white in front, and to have red and amber lights on its sides. In Illinois, one observer said it made a hissing sound. Frank Courson, a Knox County, Illinois, Deputy Sheriff, on the force nineteen years and a private pilot for three years, watched one UFO—then it was joined by another. He said the second UFO was "bluish white and pulsating red," that it had "a rim that looked like it was about five feet

thick" at the bottom of what looked like "an upside-down bowl." He figured it was about 35 feet in diameter. At 6:30 P.M. on March 24, 1967, near Coventry, Connecticut, Lawrence Fawcett looked out of a car and saw a bright cigar-shaped object with a "gigantic bright light on top." It stayed, he said, above power lines for about 10 minutes. Then it took off—following the power lines. Mrs. R. L. Biesele sent me the *Hartford Times*'s clipping of the incident. Fawcett said the UFO was "nothing like I've ever seen before," was oval, and moved forward, up and down, or hovered. Four other men in the car with him agreed with him.

Electromagnetic plasmas (a kind of gases) generated by high-tension power lines were one of a number of things UFOs might be, Donald Menzel, the man who had identified "The Rotating Lights of Japan" (Chapter 2), said in 1967. UFOs had become so important a topic in the U. S. that Dr. Menzel was one of two speakers who addressed the nationwide American Society of Newspaper Editors on the subject, in Washington D.C. The other, Dr. James C. McDonald, a professor of meteorology at the University of Arizona, said that after studying UFOs for a year, he had become convinced that "something is going on here of greatest scientific interest."

With these and other sightings still coming in, an American scientist involved in the investigations of UFOs summed up the situation in 1967, after twenty years of reports of UFOs: "We have absolutely no idea what the objects are, or where they come from."

Bibliography

Apro. Tucson, Aerial Phenomena Research Organization, bimonthly bulletin.

Edwards, Frank, *Flying Saucers—Serious Business.* New York, Lyle Stuart, 1966. (Paperback by Bantam Books, Inc.)

"Flying Saucers," *book* (1966).

Fuller, John G., *Incident at Exeter.* New York, Putnam's, 1966.

Girvan, Waveney, *Flying Saucers and Common Sense.* New York, Citadel, 1955.

Keyhoe, Donald, *The Flying Saucers Are Real.* New York, Fawcett, 1950.

Keyhoe, Donald, *Flying Saucers from Outer Space.* New York, Permabooks, 1954.

———, *Flying Saucers, Top Secret.* New York, Putnam's, 1960.

Klass, P. J., "Articles." *Aviation Week and Space Technology* (August 22, 1966, and October 3, 1966).

Lear, John, "What Are the Unidentified Aerial Objects?" *Saturday Review* (August 6, 1966).

Lorenzen, Coral E., *The Great Flying Saucer Hoax.* Tucson, 1962. (Signet paperback edition: *The Startling Evidence of the Invasion from Outer Space.*)

Mallan, Lloyd, "Articles." *Science and Mechanics* (December, 1966; January, February, March, and April, 1967).

Menzel, Donald H., *Flying Saucers.* Cambridge, Mass., Harvard University Press, 1953.

Menzel, Donald H., and Boyd, Lyle G., *The World of Flying Saucers.* New York, Doubleday, 1963.

Michel, Aime, *Flying Saucers and the Straight-Line Mystery.* New York, Criterion, 1958.

———, *The Truth About Flying Saucers.* New York, Criterion, 1956.

Nicap. Washington, National Investigations Committee on Aerial Phenomena, 8-page bulletin to members every six weeks.

———, *The UFO Evidence.* Washington, NICAP, 1964.

Ruppelt, Edward J., The Report on Unidentified Flying Objects. New York, Doubleday, 1956. (Ace paperback.)

Stanton, L. Jerome, *Flying Saucers: Hoax or Reality?* New York, Belmont Books, 1966.

Tacker, Lt. Col. L. J., *Flying Saucers and the U.S. Air Force.* Princeton, N.J., Van Nostrand, 1960.

U.S. Air Force, *Project Blue Book.* An annual report, coming out in February each year, that brings up-to-date information on sightings reported to the Air Force.

U.S. News & World Report (August 22, 1966).

Vallee, Jacques, *Anatomy of a Phenomenon.* Chicago, Henry Regnery, 1965.

Index

Aerial Phenomena Group of the Aerospace Technical Intelligence Center, 68
Aerospace Technical Intelligence Center, 59
Air Force, 13, 14, 23–25, 33, 37, 55, 56, 62, 67–74, 83 ff., 109, 110, 164, 183, 186
Air Force Project Blue Book. *See* Project Blue Book
American Institute of Aeronautics and Astronautics, 174
Ammonia vapor, 165, 166
Apollo spacecraft, 111
Asteroid, 149, 170–71

Ball lightning, 121 ff.
Balloon, Skyhook, 62, 63
Biesele, Mrs. R. L., 189
Blue Book. *See* Project Blue Book
"Bogey," 85
Bolide, 147
Boyd, Mrs. Lyle G., 12, 13, 26
Branley, Dr. Franklyn M., 150
Brissenden, Mrs. Hoke, 17
Brown, Harold, 15

Condon, Dr. Edward U., 14
Conrad, Astronaut Charles, 174
Cook, Stuart W., 15
Cooper, Astronaut Gordon, 174
Corona discharge, 127, 128
Corona light, 139, 140
Cromie, William J., 119

Dollfuss, Audouin, 170

Echo, radar, 171
Echoes, second-trip, 87
Environmental Science Services Administration, 15
Eros, 170, 171
Explorer I, 119

Finkelstein, Dr. David, 124
Fireball, 147
Flying ants, 137–40
Flying saucer, term first used, 21
Foo balls, 9, 27
Fuller, John G., 95 ff.

Gallup poll, 39–45
Gemini 5, 174
General Electric Company, 126, 127
Ghost rockets, 28
Green fireballs, 61

Harvard College Observatory, 179
Houston Post, 47 ff., 75 ff.
Hynek, Dr. Josef Allen, 129, 149, 182 ff.

IFO (Identified Flying Object), 68, 69, 70
IFOs: Balloons, 62, 63, 72, 73, 75 ff.; C-141s, 84 ff.; Fireballs, 60; Flares, 75 ff.; Guam, 84 ff.; Made in laboratory, 165; Mirages, 21 ff., 27; Photograph duplicated, 183; Rice University, 75; "Rotating Lights of Japan, The," 11, 12, 13; Satellites, 71; Second-trip radar images, 84 ff.; Star, 33; Swamp gas, 183; Venus, 12, 13, 27, 62, 110, 115, 116
Incident at Exeter, 95 ff.
Interplanetary travel, 173–76

Jupiter, 170, 177, 178

Keyhoe, Maj. Donald, 90
Klass, Philip J., 126–28
Knight, Maj. William J., 146
Kugelblitz, 121 ff.

La Paz, Dr. Lincoln, 61
Life on other planets, 177–80
Long Island *Star-Journal,* 35
Low, Frank, 169, 170
Low, Robert J., 15, 186
Lunar Orbiter I, 117, 118, 119; II, 118, 119; III, 119; IV, 119

McCormack, Rep. John W., 15, 16
McDonald, Dr. James C., 189
Machirella, Henry, 33
Man-made, 165–68
Mariner II, 115, 116
Mariner IV, 114, 115, 174
Mars, 114–16, 170, 174–77, 179
Massachusetts Institute of Technology, 180
Melpar, Inc., 165–67
Menzel, Dr. Donald Howard, 12, 13, 25, 26, 61, 189
Meteor, 147–50
Meteorite, 147
Milky Way, 178, 179
Minnaert, 183, 184
Moon, description of, 117–19
Morrison, Prof. Philip, 180
Motz, Prof. Lloyd, 179

National Academy of Sciences, 15
National Aeronautics and Space Administration, 114, 115, 177, 178
National Center for Atmospheric Research, 15
National Investigations Committee on Aerial Phenomena, 90, 186
New York *Daily News,* 31 ff., 155
Nicholson, Dr. Thomas D., 147, 149
North American Air Defense Command Space Detection and Tracking System, 71
Novitt, Norton T., 137 ff.

Pioneer VI, 113
Pioneer VII, 114
Planetoid, 149, 170, 171
Ponnamperuma, Dr. Cyril, 178
Powell, Dr. Robert S., 165–67
Project Blue Book, 56, 57, 64, 68–73
Prophet Ezekiel, 141

Quintanilla, Maj. Hector, 68

Radar, 83 ff., 108, 109, 169, 171, 172
Radio telescope, 180, 181
Ranger VII, 117
Rice University, 75 ff., 119, 169
Roach, Dr. Franklin E., 15
Rubinstein, Dr. Julio, 124
Ruppelt, Capt. Edward J., 56 ff., 64, 82

Saturn, tenth moon of, 170
Schirra, Capt. Walter M., 173
Schroder, Lt. Col. Howard B., 84
Second-trip echoes, 87
Shapley, Dr. Harlow, 179
Sightings By date: Ancient, 141–45; Bible, 141; First widely reported, 23; Number of, by year, 68; 1800s, 134–36;

1940s, 21–30; 1965, 90 ff.; late 1960s, 155 ff.
Sightings By people: Adams, Capt. Jack, 64; Anderson, C. W., 152; Anderson, Co-pilot G. W., 64; Arnold, Kenneth, 21 ff., 134, 159, 160; Autry, John J., 37, 38; Barton, George, 89; Bates, Co-pilot Herb, 187; Bertrand, Patrolman Eugene, 95 ff.; Buchert, Police Chief Gerald, 107; Burns, Gov. Hayden, 187; Butler, Aca, 89; Casazza, Police Chief John, 20; Chiles, Capt. Clarence S., 54, 55; Davis, Lora, 101; Deyo, Mrs. Alfred, 102, 103; Dikeman, Kelly, 47 ff., 155; Easter, Philip, 43; Fuller, John G., 103; Gaarder, Game Warden Floyd, 7–9; Goode, Bob, 153, 155; Gribbin, Patrolman Patrick, 7–9; Hamilton, Alexander, 129 ff.; Hautman, Patrolman Bill, 35; Huff. Don, 89; Hunt, Patrolman David, 98 ff.; Hustin, Patrolman Wayne, 106; Huston, Roger, 7–9; Jackson, W. T., 47 ff., 155; Kimball, Bob, 103; Kruger, Patrolman Fred, 32, 33; Kuntz, Dr. Albert, 154; Laxson, Eddie, 151, 152; Lisso, Patrolman Glenn, 154; Maimoni, Sgt. Enrico, 32, 33; Mantell, Capt. Thomas, 61–63; Martin, John, 133, 134; McCoy, Chief Deputy Sheriff Billy E., 153, 155; McKelvic, Clarence P., 55; Means, Patrolman Buddy, 154; Mooney, James, 32, 33; Muscarello, Norman, 95 ff., 153; Neff, Deputy W. L., 105–7; Pastor, Patrolman William, 19; Pearce, Mrs. Rudy, 102, 103; Roberts, Sheriff Lee, 7–9; Roe, R. D., 89; Smith, Ron, 102; Spaur, Deputy Dale F., 105 ff.; Spinney, Mrs. Harlow, 100, 101; Stevens, Gerri, 17; Stoops, Harold, 44; Tate, Patrolman James, 32, 33; Thompson, Sgt. Benjamin, 18, 188; Wester, Patrolman Edward, 19; Whitted, Co-pilot John B., 54, 55; Wolfe, Mayor Harry T., 20
Sightings, Places: Andersen Air Force Base, Guam, 83 ff.; Baltimore, Md., 43; Baytown, Tex., 47 ff.; Carson Sink, Nev., 56 ff.; Denison, Tex., 133, 134; Dexter, Mich., 183; East Paterson, N.J., 19; Exeter, N.H., 95 ff.; Fairchild Air Force Base, Wash., 58 ff.; Freeport, Tex., 152, 153; Godman Air Force Base, Ky., 61 ff.; Guam, 83 ff.; Hillsdale, Mich., 183; Hillsdale College, 183; Honshu, Japan, 11 ff.; Houston, Tex., 75 ff.; Le Roy, Kan., 129 ff.; Lincoln, Neb, 89; Long Island, N.Y., 31 ff.; Montgomery, Ala., 53; Mountain Lakes, N.J., 11; Mount Rainier, Wash., 21 ff.; Patchogue, L.I., N.Y., 31 ff.; Pompton Lakes, N.Y., 18 ff.; Ravenna, Ohio, 105; Ringwood, N.J., 20; South Dakota, 7–9, 155; Temple, Okla., 151, 152; Topeka, Kan., 44; Wanaque, N.J., 17 ff., 188; Washington, D.C., 108; White Sands Proving Grounds, N.M., 63
Sightings at sea, 65, 66, 93
Sightings still pending, 69
Sightings unidentified, 68, 69, 74
Smiley, Dr. Charles Hugh, 174 ff.
Spectrum, 161 ff.
Sputnik I, 119
Sputnik II, 119
Sullivan, Walter, 179
Surveyor I, II, III, 117
Swamp gas, 183, 184

Toland, Patrolman Reginald, 97, 98
Turner, Elbert, 75

UFO, term created, 56
University of Colorado, 14, 15, 186

Vanguard I, 119
Vanzant, Bob, 79
Venus, description of, 147, 174 ff.
Villegas, Mrs. Patricia, 188

Westinghouse Electric Corporation, 123 ff.
Whipple, Dr. Fred Laurence, 148, 149
Woeller, Fritz, 178
Wood, Jane, 187
Woods, Jimmie, 47 ff.
Wright-Patterson Air Force Base, Ohio, 68

Yeager, Maj. Charles E., 25

The Author

GARDNER SOULE frequently reports on the mysteries of our times and of past generations. He has written about exotic mysterious creatures such as the gorilla (which became fact not myth scarcely a hundred years ago) and the Abominable Snowman (still unsolved). He gathers facts with prodigious patience, organizes them, and presents them clearly. He leaves his reader to form his own opinions or to remain mystified if he so chooses.

882

Gardner Soule's exciting books include *The Maybe Monsters, Trail of the Abominable Snowman*, and *The Mystery Monsters*.

45887